THE MONTH

OUR Diary for 1874 is approaching completion, and we hope to publish it early in November. It will be a handsome, useful book, and will contain much valuable matter, as well as the variously ruled pages which gave it so much prestige last year. It will be supplied post free for 2s. 6d. Firms wishing to advertise in it will please communicate immediately with our publisher.

The chief pharmaceutical event of the past month has been, of course, the session of the British Pharmaceutical Conference. We devote a considerable space to a condensed report of its proceedings, and we have endeavoured also to present abstracts of most of the papers read, many of which were of a highly important character. The President (Mr. Brady, F.L.S.) took the opportunity of introducing into his inaugural address some remarks adverse to the alterations recently made in the School of Pharmacy.

Congresses, Conferences, and Associations have been held in such crowds of late that it is impossible for a monthly journalist to pick out even the special features of all of them. Time seems drawing on when not only trade, but religion, science, thought of every kind, enterprises of great pith and moment, and all other sorts of enterprises, and every scheme which enters into the heart of man to conceive, are to be organized and conducted by co-operative society action on the limited liability principle. We want a society to keep alive individualism among us.

Our German correspondent gives us a brief account of the meeting of the German Empire "Apotheker-Verein" at Cologne. For the first time this meeting was an amalgamation of the North German and South German (Bavarian, etc.) Associations.

Our American correspondent promised to send us a special account of the meeting of the American Pharmaceutical Association held at Richmond at the same time that the British Conference sat at Bradford. His report has, however, failed to reach us. Possibly he entrusted it to Professor Wise's balloon-post. We note, however, that a most successful meeting was held under the presidency of Professor Albert E. Ebert, of Chicago. Some fears had been entertained lest Northern and Southern political prejudices should clash, but Richmond seems to have out-Heroded most of the other centres in courtesy and kindness. Professor Ebert presented 500 dollars as a fund for establishing an annual prize essay. The next meeting of the Association is to take place at Louisville, Kentucky.

In our Portrait Gallery this month appears a striking likeness of Professor Redwood, Ph.D., F.C.S., a gentleman of world-wide fame, and one than whom few have done more towards the promotion of pharmaceutical progress. We have a particular pleasure in presenting this portrait, and the sketch of Dr. Redwood's life. He was for the first ten years of our existence the editor of our contemporary the *Pharmaceutical Journal*, and in that capacity we may have been compelled occasionally to point out his errors. He never took any "opposition" remarks as a personal affront, and never failed to treat us with every courtesy.

Our next portrait will be one of Mr. Sydney Plowman, the redoubtable student who, at the annual distribution of prizes at the Pharmaceutical Society on October 1, carried off the Silver Medal for Chemistry and Pharmacy, the Silver Medal for Botany and Materia Medica, the Silver Medal for Practical Chemistry, the Pereira Medal, and the Senior Bell Scholarship.

The distribution of prizes was a very enthusiastic meeting. The cheering of the Professors, of the successful students, and of Mr. Sandford was most energetic. The last-named gentleman delivered a somewhat discursive, but sound sensible address. He took the opportunity of supporting the new regulations of the School of Pharmacy in opposition to the strictures passed upon them by the President of the Pharmaceutical Conference.

The chief subject discussed in the Pharmaceutical Council this month was a proposal of Mr. Sandford's, tending to abolish local examinations. After an animated discussion, in which he met with but little support, the motion was referred to a committee, and will probably die in obscurity.

Dr. Symes has been elected to the presidency of the Liverpool Chemists' Association. In his opening address he took a somewhat lugubrious view of the position of that institution.

The Manchester Chemists' Association is perplexed, but not in despair. Its income is not large enough to pay its regular expenses. But this fact by no means checked the spirit and enjoyment of the annual supper.

Mr. Leake, of Ramsgate, has hardly withdrawn from questionable fame, when Dr. Scoffern comes forward to fill the vacancy of public accuser of chemists and druggists. Dr. Scoffern is a gentleman of some eminence, and both he and the chemist he has attacked have given our reporter every information in reference to an unfortunate matter which recently got into the papers.

Mr. Kelly, the Liverpool butterman, having been worried for nearly twelve months under the Adulteration Act, and whose butter has been examined by various analytical chemists with astonishingly diverse results, was finally triumphant on September 11th at the Liverpool Police-court. Dr. Anderson, of Glasgow, had been chosen as referee, and his report was to the effect that the butter was really such and unadulterated. The officious interference of the authorities has cost Mr. Kelly about £100. The worst of it is that it seems to be quite legal.

We publish this month articles on Alchemy in its relation to Pharmacy, on Cinchona Cultivation in India, and on the Production of Opium. Also some sketches from the Vienna Exhibition, with an account of Mr. Solvay's process for making carbonate of soda, to which a diploma of honour has been awarded. In reference to the Vienna prize medals, we refer to a letter in our Correspondence columns from Mr. Rimmel, the perfumer.

Our reviews contain the concluding notice of Mr. Proctor's Practical Pharmacy, and an article on Chinese Medicines, suggested by a recent work by Dr. Leon Soubeiran, of Paris. Also notices of several other works of medical, chemical, and pharmaceutical interest.

Continued advances in the price of quinine and mercury are the most noticeable characteristics of the markets. Business is said to be steady and hopeful.

THEOPHILUS REDWOOD, Ph.D., F.C.S.

Professor of Chemistry and Pharmacy to the Pharmaceutical Society of Great Britain.

THE gentleman to whom the present notice refers has occupied a prominent position in the Pharmaceutical Society ever since its foundation. He had previously been engaged for many years in the practice of pharmacy. Towards the end of the first quarter of this century, on a busy market day, he entered the establishment of a country apothecary, who was also the principal druggist of the town, for the purpose of rendering assistance during the temporary absence of an apprentice. The apothecary, Mr. Charles Vachell, was his brother-in-law, and the town was Cardiff, a place then of comparatively little importance, which has since grown into commercial notoriety. The first duty in which the young assistant had to engage was that of helping at the removal of a boy's finger, which had been crushed in a machine. Then followed the bustle of business in a shop full of customers throughout the day—a new life for a school-boy who was not yet supposed to have finished his schooling. Mr. Vachell had a good business and a considerable practice as an apothecary. In common with others who had commenced practice before 1815, he had no certificate or diploma, but having studied medicine at the London hospitals, his qualification was equal to that of most country practitioners of the day. He was a man of good natural abilities, with much aptitude for business, which enabled him to amass an ample fortune and attain to the highest civic offices in the town, where he was highly respected.

The temporary want of assistance in Mr. Vachell's house became one of a more permanent character, and the temporary assistant, having made himself useful, was pressed into a prolonged engagement. Only a week had elapsed since his first entering the house, when his surgical skill, after so short an apprenticeship, was put to the test. Market day had returned, and just as the busy time was commencing, a messenger came to the door on horseback to summon the doctor to a gentleman's house a few miles off to attend the steward, who had been thrown from his horse as he was preparing to start for Cardiff market. The case was considered to be one requiring the use of the lancet, blood-letting being a fashionable remedy of the time. Mr. Vachell himself had pressing duties to attend to at home. The young apprentice was the only person who could be spared, so with the experience derived from his having been present at a few cases of bleeding, supplemented by an extemporized lesson on a cabbage-leaf, he was despatched on the horse that had shortly before done damage to the steward, with injunctions to assume the airs of a master of the art of surgery, or at least not to indicate want of knowledge by want of confidence. The operation was performed with success, and the operator was commended for his skill and approved for other similar engagements. But this was only a small part of the duties devolving on members of Mr. Vachell's establishment. The work here was of a very mixed nature, including the powdering of drugs and the grinding of paints, with occasional diversions at tooth-drawing and other minor surgical operations. Three years had been thus spent when the apprentice began to sigh for more extended opportunities for the acquirement of professional knowledge, either medical or pharmaceutical.

Through the influence of a Quaker lady who happened to be visiting at his father's house at Boverton, an arrangement was made to transfer the apprentice to a celebrated house in London, that of John Bell and Company, of Oxford-street, with whom an engagement was made which partook of the character of a second apprenticeship, for three years. Medical practice was now set aside, the new business being purely pharmaceutical, with none even of the mixed and rough work which so often forms part of a country drug business. Beginning here at the lowest post, many months were spent in weighing out Epsom salts and seidlitz powders, filling two-ounce bottles of castor oil and tincture of rhubarb, and such-like operations. The past experience of the new comer had not qualified him for the more important duties of dispensing, which formed the principal part of this business. Prescriptions at Cardiff were of rare occurrence, and it appeared now that the time spent in bleeding and tooth-drawing, doctoring and mixing paints, might have been more profitably occupied at school. The schooling had not been bad, but to meet an emergency it was suspended before the fitting time. The schoolmaster was the pupil's father, who lived on a small estate in a quiet country village—Boverton in Glamorganshire—and here, with the aid of masters from the neighbouring town of Cowbridge, he trained three of his sons in a sound and useful education.

The arrangements of the establishment at 338, Oxford-street, afforded means for supplying to some extent what was deficient in any department of knowledge required for the practice of pharmacy, including even deficiency of school learning. Those were not days of short hours of business, but every hour between the time of early rising and late closing, that was not otherwise usefully occupied, was devoted to reading. The walk before breakfast when off duty, the book at breakfast and tea-time, after dinner and after leaving the shop at night, was the practice encouraged and uniformly adopted through the house. In this way, stimulated by association with those having similar objects and pursuits, and by the requirements made manifest by the daily occupations of qualified fellow-assistants, there could be no excuse but that of blind indifference or incapacity for neglecting to pursue such studies as were most required; and many who have gone through this training have borne testimony to the fact that the time thus spent has been to them more fruitful of permanent and useful information than any other period of their lives.

Among a numerous staff of assistants engaged in occupations in which scientific, classical, and literary knowledge are all desirable, if not necessary qualifications, and in an establishment such as that alluded to, in which these qualifications were recognised and encouraged, it might be expected that there would from time to time be some who were distinguished by special attainments. Among those associated with the subject of this notice there was Robert Alsop, whose forte was analytical chemistry; then there were William Hodgson, who was distinguished among his companions for his classical knowledge; Henry Watson, whose bent was for poetry; and George Nelson, who devoted his energies to manufacturing arts, and afterwards became gelatine manufacturer. Learned and interesting discussions among these and other members of the staff often filled up a spare hour in the evening, and on such occasions the company was not complete without John Simmonds, the laboratory man, who figures in Hunt's picture of Bell's laboratory, and who, having entered the house as errand-boy, when the shop was first opened by John Bell, had many amusing stories to tell relating to times gone by.

The business, from small beginnings, had grown in a few years to be one of the most important of the sort in London. John Bell and Co. had acquired a great reputation, and

THE CHEMIST AND DRUGGIST PORTRAIT GALLERY.

III.

BUTTERWORTH & HEATH SC.

Yours truly
T Redwood

Professor of Chemistry and Pharmacy in the School of Pharmacy.

the house was resorted to by customers from far and near. The shop was generally thronged, and the accommodation it afforded was unequal to the requirements of a business still yearly increasing. This afforded an opportunity for the subject of our narrative to distinguish himself in a new line. The necessity for enlarging and improving the shop had become so obvious that at last the head of the firm, although a humble-minded, cautious man, consented to a change, if it could be made without too materially altering the character and appearance of the place in which so much good work had already been done. A premium was offered for a plan that should be approved by the firm for enlarging and remodelling the shop; and this was to be competed for by those in the house, assistants as well as partners.

The subject of our narrative had at that time passed the period of his three years' engagement. He had gone from the "putting-up counter" to the infusion and decoction department, and from thence to the "regular department," which comprised the sending out of medicines that were supplied regularly every day or every two or three days to customers who took their medicine as they took their food, and thought it equally necessary. In those days medicines were largely prescribed in draughts, for those who could afford the luxury; and it was no unusual thing for the assistant having charge of the regular department to send out daily from ten to twenty sets of four or six draughts to patients who took them either twice or three times a day, and some of whom were thus supplied for years, without intermission. Where are these patients nowadays, or the physicians who prescribed for them? Does even the "regular man" or his department exist now? We know not, but this we know, that draughts have been to a great extent superseded by mixtures, and mixtures by drops, with increased danger to the patient, and diminished profit to the dispenser.

But to pursue the narrative, our "regular man" had left even this department, and gone to the other side of the shop, to the principal dispensing counter, where he was considered an expert and accurate dispenser.

The proffered premium for the approved design for remodelling the shop occasioned, as might be supposed, some excitement in the establishment. Plans and drawings were sent in, and one was approved in every particular. It involved some material alterations in the structure of the house, which were required to give shop-room enough. The mode of carrying out these alterations was specified, and a drawing given of the proposed new shop, in which all the bottles, pots, and drawers were figured, labelled, and represented in the respective places they were intended to occupy.

The plan as originally drawn, without any alteration, was not only accepted and adopted, but so literally carried into effect, that for some time after the alteration was made a reference to the drawing would have indicated where anything in the shop might be found.

The author of this plan (the subject of our narrative) soon took his position as first assistant, and before he quitted it he received, it is believed, the highest salary that had at that time been given to any assistant in the house.

In all its essential features the shop still remains what it was then made. There can be little doubt, however, that a different plan by another author would have been adopted, if a gentleman, who was then just leaving school, but had not yet come into the business, as the eldest son of the senior partner, had made his *début* a few years sooner.

The advent of Jacob Bell, at 338, Oxford-street, formed an epoch in the history of the business he was entering, as well as in that of the subject of our narrative. Jacob Bell and Theophilus Redwood were henceforth for many years intimately associated both during and after the continuance of the latter with J. Bell and Co. They studied together, attended lectures at the Royal Institution together, and appeared as Telemachus and Mentor, in almost every page of a manuscript journal, cleverly illustrated with pen-and-ink sketches, in which Jacob Bell recorded the daily events of his apprentice life.

Thus several years were spent, after which Mr. Redwood established a business in Crawford-street, which was subsequently purchased by Mr. Thomas Bigg, from whom it passed to Mr. Curtis, now of Baker-street. Meanwhile Mr. Redwood having fitted up a small factory, devoted himself to the production of certain chemical and pharmaceutical preparations. He was thus occupied when efforts were being made for the establishment of the Pharmaceutical Society, which brought him again into association with his friend Jacob Bell. The *Pharmaceutical Journal* was commenced, and from this time forward Mr. Redwood's time was almost entirely devoted to the work of the Society and of the journal connected with it, of which he was the sub-editor, Mr. Bell being proprietor and principal editor. Working daily in concert, whatever was done or proposed by either of these promoters of pharmaceutical reform, in pursuance of the object they had in view, was discussed and arranged every evening, when the busy occupations of the day were over; and thus often, long after midnight, were knotty questions debated relating to editorial duties, or to the establishment of the new Society. Much of the labour of organizing the Society, its lectures, evening meetings, library, museums, and laboratory, devolved upon Mr. Redwood. From the commencement he was appointed Professor of Pharmacy, and on the resignation of Mr. Fownes from ill-health, the Chair of Chemistry was united with that of Pharmacy. The laboratory was also placed under Mr. Redwood's direction. It might, indeed, be said that the first efficient laboratory specially arranged for giving practical instruction either in chemistry or pharmacy in this country, was that which, under Mr. Redwood's direction, and from his designs, was constructed at 17, Bloomsbury-square, in 1845. At a somewhat earlier period than this, a room in the upper part of the house had been fitted up, and appropriated to the purpose of instructing pupils in practical chemistry; and this first attempt at the introduction of a system which had been adopted and approved on the Continent, but had not as yet been introduced into England, proved so far successful, that the Council of the Society was induced in the following year to incur a considerable expense in fitting up another more complete and extensive laboratory in the basement, a description of which, with drawings, is given in the *Pharmaceutical Journal*, vol. v. The late Dr. Ure, in speaking of this at a meeting of the Society, said, "He had seen many laboratories intended for similar purposes—he believed he had seen all those in Germany, including the celebrated one at Giessen, and most of those in France—and he was prepared to assert, that the laboratory of the Pharmaceutical Society was, for its size, superior to any of these." The College of Chemistry, under Dr. Hofmann, and the Birkbeck Laboratory at University College, under Professor Fownes, followed soon afterwards, the latter of these being constructed on the same principle as that of the one in Bloomsbury-square. The new laboratory of the Society, as well as the previously constructed one upstairs, was generally full, and the duties of the professor, who had now been also appointed Secretary of the Chemical Society, and also of the Cavendish Society, involved the performance of a great amount of work. That he acquitted himself to the satisfaction of those under his charge might be inferred from the fact that in 1850 he received a very handsome testimonial, consisting of a costly service of plate, which was presented to him by about a hundred of his pupils.

Notwithstanding the numerous and important demands on his attention connected with his official appointments, he found time in 1847 to bring out a new edition of "Gray's Supplement to the Pharmacopœia," in which the work was recast, and almost entirely re-written. As three thousand copies of this were sold within twelve months other editions followed with further modification, leaving, in fact, almost nothing of the original, in substance or design, beyond the title, and in this Gray's name was now omitted, and Redwood's substituted. In 1849 he undertook the editing of an English edition of a work, then in course of publication, by Dr. Mohr, of Coblentz, on Practical Pharmacy. It was found, however, as the German work progressed, that much of the matter was not well suited for English pharmacists, and a great part of the English edition was therefore composed by the editor, who thus became joint author.

On the occasion of Professor Liebig's quitting Giessen, where he had so long established a reputation for himself, and also for the university to which he was attached, he proposed, through Dr. Hofmann, to several English chemists, including Mr. Redwood, that they should receive the diploma of the University as a parting act of one of its most distinguished professors. For several years afterwards, however, Mr. Redwood rarely used the title thus conferred upon him.

The Pharmaceutical Society, although encountering opposition where it had least reason to expect it, and suffering at times under depressing influences, was nevertheless making steady progress in the acquirement of a good reputation. The Council of the Society was applied to by the Royal College of Physicians for assistance in revising the "London Pharmacopœia," and for several years a committee, of which Dr. Redwood was honorary secretary, was engaged in the investigation of the processes of the Pharmacopœia, Mr. Deane and Mr. Squire being active and efficient members of this committee.

But Dr. Redwood's associates and official connections were not confined to the Pharmaceutical Society. In the Chemical Society and the Cavendish Society he was brought into intimate association with many eminent chemists, with some of whom he was frequently engaged in scientific work. With Professors Graham and Hofmann he undertook some important investigations for the Government on the subjects of fermentation; the determination of the original gravities of fermented liquors, and the best means of preparing a spirit which could be used duty free for manufacturing purposes. The occupations connected with his numerous appointments, however, afforded but little time for scientific research. Such work as he was enabled to undertake in that direction is mostly recorded in the *Pharmaceutical Journal.*

The first edition of the "British Pharmacopœia," which was published in 1864, having failed to give the satisfaction that had been anticipated, Dr. Redwood was engaged, in conjunction with Mr. Warington, to revise the work, and prepare a new edition, a duty the performance of which devolved principally on Dr. Redwood in consequence of the declining health of his coadjutor.

In 1859 the Pharmaceutical Society lost its best friend and supporter, Jacob Bell, who, more than anyone else had contributed to its formation and establishment, and who, by his disinterested zeal and advocacy, had raised it to a position of power and influence. At the death of Mr. Bell the *Pharmaceutical Journal* became the property of the Society, and the editorship was vested, by Mr. Bell's desire, in Professors Redwood and Bentley, assisted by a committee. Mr. Bell not only bequeathed the *Journal* to the Society, but also a sum of £2,000 "to be expended in establishing or otherwise increasing the efficacy of a School of Pharmacy, or in promoting pharmaceutical education, in such manner as the Council of the said Society may deem expedient." It was decided to apply this money in constructing a new laboratory, which should be more commodious than that which then existed in Bloomsbury-square. Mr. George Lansdown, son-in-law of the indefatigable Secretary of the Society, was professionally employed to survey the premises, and, in conjunction with Dr. Redwood, who was director of the laboratory, devised a plan upon which the present laboratories at the top of the house were constructed.

Dr. Redwood was married in 1845 to Charlotte Elizabeth, the eldest daughter of Mr. Morson, the well-known chemist, of Southampton-row and Queen-square, but he had the great misfortune to lose his wife in 1868, after a long illness. There are eight surviving children, six sons and two daughters.

Dr. Redwood having for many years taken so active a part in promoting the advancement of scientific pharmacy in this country, it is hardly necessary to say that he has from time to time been appointed honorary member of many scientific bodies on the Continents of Europe and America.

Such a course of true, honest work for pharmacy as Dr. Redwood has performed, and which in a sketch like this can only be catalogued and not enlarged upon, is worthy of all the honour we can give. British pharmacists have especial reason for respect, for they use daily perhaps the most perfect pharmacopœia in the world; and for the thoroughly practical character of that work they are undoubtedly mainly indebted to the untiring labours and peculiar ability of Professor Redwood.

THE BRITISH PHARMACEUTICAL CONFERENCE.

THE busy town of Bradford, up to its eyes in wool, and evidently making money somewhat faster than it can conveniently absorb it, gave a right hearty welcome to the men of science, who this year pitched their camp amid its great factories. No part of that welcome was more cordial and generous than that which the chemists and druggists extended to their friends from a distance, and though we believe that the labour and expense of providing for the Conference had fallen on a very few, perhaps fewer than have ever before carried out the task, it is to be remarked that the arrangements have never been more complete, nor the hospitality more thoughtful.

To an outsider there is something a little mysterious in the British Pharmaceutical Conference, which, unexpected by the general public, comes and plants itself down where the Association is coming, and after a day or two's excitement about subjects of apparently little meaning, suddenly vanishes into thin air. An irreverent friend once likened the Conference and the Association to one of the most famous paintings of the late Sir Edwin Landseer. But the look of scorn and pity which met his feeble satire showed him that he had ventured on a sort of sacred ground. This year an article in one of the Bradford daily papers, over the familiar signature of "Joseph Ince," appearing the day before the meeting, explained to the public, who composed, and what was the purpose of the British Pharmaceutical Conference. The narrative magnified the pharmaceutists' calling, but tore from our assembly the veil of mystery which would otherwise have hung around the Conference.

It would need a special education to find the way about Bradford, with its curling streets and shadowy masses of warehouses, which to the unfamiliar stranger seem to get first in one part of the town then in another. Piloted therefore to the scene of action, we found a meeting somewhat smaller than usual, and with many conspicuous absences, but yet including what we are always glad to see, a fair show of new faces. We can hardly think, however, that the Yorkshire contingent came up to what had been reasonably anticipated. For Yorkshiremen can come out very strong when they are stirred, and we had hoped that they would have started the Conference, on its second decade, with an extra impetus, by throwing into its meeting the force of numbers as well as the energy and spirit for which they are proverbial. The Bradford meeting, however, must unquestionably rank high for the quality of the papers read, and for the real usefulness of the work accomplished. Not less, we think, for the really pithy character of all the discussions, which in no case wandered from the point raised, as they are so liable to do in these meetings. Credit on this point is unquestionably due to the President, for his excellent guiding. We shall proceed to an account of the meeting, which in order to include it all in one article, must necessarily be given rather summarily.

The formal business consisted in the reception of delegates and election of new members. Then an interchange of courtesies took place with America. A letter was received from Mr. P. W. Bedford, who, as the secretary of a committee appointed by the American Pharmaceutical Association, forwarded, as a present to the British Pharmaceutical Conference, "an album, containing the shadows of some of the officers and members" of the American Association. This album was brought from New York by one of the proprietors of the Chemist and Druggist, who had been travelling through the United States, and reached the Conference on its second day's session. It excited considerable interest, and of course was duly acknowledged with thanks.

It happened for the second time that the British Pharmaceutical Conference and the American Pharmaceutical Association held their sittings simultaneously. The latter met at Richmond. It was suggested by the President of the Conference, and resolved by the meeting, to send a message by wire, as was done at Liverpool, in 1870. The following was therefore drawn up by Mr. Benger, and transmitted:—

"From the President of the British Pharmaceutical Conference, Bradford, England,

"To the President of the American Pharmaceutical Association, Richmond, Virginia.

"*Our members send to your members hearty fraternal greetings.*"

That same evening, at the dinner, the President announced that he had received a reply from the President of the American Pharmaceutical Association, thus worded:—

"*We return your hearty fraternal greetings.*"

We hope the Americans did not mean exactly what their message conveyed.

The report of the Executive Committee, read by the Junior Secretary (Mr. F. Baden Benger), referred to subjects which have already been fully treated in this journal. The chief points in it related to what had been done with the £200 presented by Mr. Hills, as an aid to original research; and it was mentioned that no application for such aid had as yet been received. The Committee asked the meeting to vote that the annual subscription should be raised to 7s. 6d. (which it did unanimously), and also reported its resolution against the expediency of visiting Belfast in 1874, suggesting London in preference. The Treasurer (Mr. G. F. Schacht) then read his annual financial statement, which showed that he began the year with a balance in hand of £38 14s. 1d., and closed it with a balance due to himself £4 5s. 4d. The members' subscriptions amounted to £470 19s. 9d.; and Messrs. Butler and Tanner's bill for printing, binding, and banding the year-book was £358 15s. 3d. The reports were adopted, and the President proceeded to deliver his inaugural address.

Mr. Brady first took a short retrospective view of the ten years of existence which the Conference had accomplished. He traced and credited the idea of its foundation to Mr. Schacht, and specifically to Mr. Reynolds. And having given a panoramic sketch of the various meetings of the Conference, he continued:—

Our meeting at Brighton last year is still fresh in your minds. Science for once scarcely had its fair share of attention, but gave way, perforce, to the pressing and at the time irrepressible question of "provincial education." Though it cannot be said that any definite solution of the much-vexed problem was the result, it is hardly possible to regret the time spent over a discussion that did such good service in ripening opinion on a new and many sided subject.

Such, then, has been the course of our Association, and if you ask me what there is to show of results, I may point to the organization which renders possible such a meeting as we have here to-day as of itself no unworthy object to have worked for—to the scientific and ethical value of the papers which have been presented in past years, and the discussions which have taken place upon them—or to the "Year Book of Pharmacy," of which the fourth volume will ere long be in your possession, and I say that any of these would by itself be reason enough for the past, and promise for the future, of the Conference.

The ten years years of its lifetime have been fruitful in external changes, modifying in many respects the relation of the Conference to general pharmacy. By far the most important of these have arisen out of the Pharmacy Act of 1868, the gathering thereby into one compact body of all who had any claim to be called pharmacists, and their separation by the hard line of registration from that large class of general dealers who, to the detriment of pharmacy and to the danger of the public, added a trade in medicines to their more miscellaneous calling. That the full effect of so radical a change is not yet apparent we all know, but every year gives fresh evidence of its salutary working.

A universal Pharmacopœia.

There are few topics that have claimed so large a share of attention, or that have been discussed with the same earnestness, as the possibility of a general fusion of pharmacopœias, and there can hardly be one of greater importance to those who are liable at all times to be called upon to prepare the compounds of any of the very numerous existing codes. The spread of commercial enterprise and the yearly-increasing disposition to travel in foreign countries for pleasure or gain are rapidly softening national boundaries, and some recognised system in medical formulæ must become more and more an international question of the same sort as the simplification of coinage, or the adoption of common standards of weight and measurement. It is not to be expected that the dream of the dispenser—a universal pharmacopœia—can be brought about *per saltum*, the matter is too complicated to be settled in such a way, but it is no small thing to be able to record that in the short lifetime of the Conference two great steps have been taken towards the desired end.

In 1864, the three pharmacopœias of the United Kingdom, namely, those of London, Edinburgh, and Dublin, were merged into one volume, under the authority vested in the General Medical Council. The representatives of each of the colleges had to surrender a good deal, but concessions which looked serious at first have caused comparatively little inconvenience in practice; so little that it seems wonderful, in looking back, that the same work was not accomplished many years earlier. The resulting volume was in many ways faulty, as indeed it could hardly fail to be; but the principle was adopted, and the issue of a new edition, three years later, was a matter of routine, not one of debate. The co-operation of two gentlemen distinguished in pharmacy, Professor Redwood and the late Mr. Warington, in the compilation of the edition of 1867, led to the production of a volume which might be compared, without disadvantage, with any pharmacopœia then existing.

Another step, at least as great, in the same direction, has been more recently taken in the issue of the "Pharmacopœia Germanica." Until a comparatively recent period not less than nine pharmacopœias were in force in the area comprised in the present German empire, namely, those of Prussia, Hanover, Saxony, Hesse, Hamburgh, Sleswick-Holstein, Baden, Wurtemburg, and Bavaria. In the year 1861 a joint voluntary commission was appointed, at the instance of the Pharmaceutical Associations of Northern Germany, Southern Germany, and Austria, to consider the questions arising out of this complicated state of things, and if possible to compile a general pharmacopœia for German-speaking nations. The commission was composed of men of highest standing in the pharmaceutical sciences, and it succeeded in producing in 1865 the first "Pharmacopœia Germaniæ." In its original form this was not accepted by any of the German States, but in 1867 an amended edition was published, which was eventually adopted by the kingnom of Saxony, and, what is much more important, served as a basis for the "Pharmacopœia Germanica" of 1872, which is now the authorized codex for the whole German Empire. The only regret is that Austria was not concerned in the latter work, and is thereby shut out for the present from the benefit of uniformity.

Differences in climate, in national habits, in natural productions, and many other external circumstances, make it almost hopeless to look for one code of universal application, but that the British and German Pharmacopœias now cover the ground that nine years ago was occupied by at least a dozen dissimilar works, is a fair subject for congratulation. What the next advance may be it is not easy to guess. There are a large number of substances in general use as medicines in almost every civilized country, and officinal in almost every pharmacopœia; and if the strengths of the preparations of such as are common to all were rendered uniform, one of the greatest causes of discrepancy in dispensing would be provided against. There would probably be no insuperable difficulty even now in unifying the recognised medicinal formulæ of Great Britain and the United States, and it would be worth a strong effort and some mutual concession to reduce to one standard the pharmacopœias of two great nations speaking the same language and otherwise closely connected.

New Remedies. The same period of about ten years—we will not draw the line very strictly—has been fruitful in the introduction of new remedial agents. Some of them experience has shown to be valuable additions to the materia medica, a larger number have been found to have a limited application, and to present no general superiority to older and well-known medicines, whilst others again have proved to be altogether valueless, their recommendation having been based on supposed properties to which they had no claim.

Of the first series, hydrate of chloral is a prominent example, a substance first introduced to us by Mr. Hanbury, who presented to the Exeter meeting of the Conference an abstract of the original paper read by Dr. Liebreich before the Berlin Chemical Society. The specimen of chloral hydrate exhibited on that occasion was regarded as a chemical curiosity, and there could be little idea that within so short a time it was to become an article of commerce on so enormous a scale. To dwell upon a substance now so familiar to all would be waste of time.

The modern germ theory and the views of advanced biologists as to the invariable presence in the air and in water of bodies, capable under favourable conditions of infinite reproduction, becoming thereby a fertile source of disease, has in the hands of Professor Lister caused a revolution in surgery, and carbolic acid, which a little time ago was scarcely thought of, except perhaps as a substitute for creasote, has in consequence become one of the most important bodies with which the pharmaceutist has to do. Solutions of other substances, such as chloride of zinc and boracic acid, have been employed with more or less success for the same purposes, but it is with carbolic acid, or the mixed carbolic and cresylic products of the distillation of coal-tar, that antiseptic treatment in medicine and surgery is more especially connected. It may possibly still be deemed an open question how far the preference for the crystalline carbolic acid over the fluid product containing the cresyl derivative has any solid basis. We, as pharmaceutists, are too apt to forget that the term "acid," as applied to this substance is to some extent a misnomer, that, chemically speaking, carbolic acid is the alcohol of the phenyl series,—its solvent, or as we say its corrosive properties, rather than its strict chemical relation, having given rise to its name. On this fact, the somewhat uncertain nature and instability of many of its so-called salts in great measure depend.

In the same category, in point of importance, may be placed the extended employment of phosphates in medicine in place of salts containing vegetable or mineral acids. This has given rise to the introduction of a long series of syrups prepared from various phosphates dissolved in excess of phosphoric acid. In most of them, iron is a prominent ingredient, but we have also calcium, sodium, potassium, nickel, and manganese amongst metallic bases, and in addition certain alkaloids, notably quinia and strychnia, presenting altogether an almost endless diversity of combination. Other phosphorous oxides, such as pyrophosphoric and hypophosphorous acid, have shared with phosphoric the favour of the medical profession, and recently, the direct combinations of phosphorus with metals—*e.g.*, phosphides of zinc or iron have been called into vogue, and the dispenser has had his wits further perplexed with fancy modes of administration of phosphorus itself in pills, capsules, oil, or ethereal tincture.

Whilst the introduction of chloral, the employment of carbolic acid in the antiseptic treatment of disease, and the development of the use of salts with one or other of the phosphorous oxides as an acid, mark the most salient changes in medical practice as affecting the duties of the pharmaceutist, during the past decade, many other new remedies have established themselves more or less securely in public favour. A considerable number of them we owe to America, for example, Podophyllin, Leptandrin, Prunus Virginiana, Actæa racemosa, and Veratrum viride.

But we are possibly too apt to search at a distance for medicaments, to the neglect of many within easy reach of our own doors. I suppose it was always so, for did not Gerarde write thus of the virtues of the golden rod two or three centuries ago:—

"It hath in times past been had in greater estimation and regard than in these dayes: for in my remembrance I have knowne the dry herbe which came from beyond the sea sold in Bucklers Bury, in London, for halfe a crowne an ounce. But since it was found in Hampstead wood, euen as it were at our townes end, no man will give halfe a crowne for an hundredweight of it: which plainly setteth forth our inconstancie and sudden mutabilitie, esteeming no longer of anything, how pretious soeuer it be, than whilst it is strange and rare. This verifieth our English prouerbe, Far fetcht and deare bought is best for ladies."

Professor Christison corrected this tendency in one remarkable instance by the re-introduction of our common male fern (*Aspidium Filix-mas*), in place of the foreign remedies for tape-worm which were so popular a few years ago, and it would be easy to point to many other indigenous plants that have more recently received the testimony of medical authority in their favour. For example, the rhizome of the bog-bean (*Menyanthes trifoliata*) has been stated to be in many respects superior to the root of its ally, the officinal gentian, and the dried leaves of the common raspberry (*Rubus Idæus*), used in some parts of the country in domestic practice in place of ergot, yield by no means the inert infusion that might be expected. The use of the expressed juice of the common periwinkle (*Vinca minor*) in uterine hæmorrhage, of the rhizome of the couch-grass (*Triticum repens*) in irritable bladder, of the red clover (*Trifolium pratense*) in hay fever, of one of our brown seaweeds (*Fucus vesiculosis*) in obesity, of a species of bed-straw (*Galium aparine*) in some cutaneous affections, of the rhizome of the burdock (*Lappa minor*) in syphilitic eruptions, have all given results that, if not sufficient to establish the claims made for them, at least show a *primâ facie* case in their favour. The last-named is but one instance out of several in which an indigenous British plant is officinal in the United States' Pharmacopœia and not in our own. A Russian physiologist recently observed that the alcoholic extract of our common hound's-tongue

(*Cynoglossum officinale*) had all the properties of curare, and though a series of experiments made a year or two ago, in conjunction with my friend Professor M. Foster, by no means confirmed the statement, they showed that the plant had nevertheless certain very peculiar effects on the nervous system, which further research might utilize. I name these but as examples of a large number that might be selected from our native flora.

A very able and interesting *résumé* of the progress of cinchona cultivation followed, but, as another article in this issue of the Chemist and Druggist gives to some extent similar particulars, we omit this part of Mr. Brady's address.

New Pharmacopœias.

The President next passed on to remark on the chemical and therapeutical characteristics of some new remedies which have lately been introduced, describing thus, the hydrate of croton-chloral, propylamine or trimethylamine, guarana, etc. A short review followed of three new Pharmacopœias, the "Pharmacopœia Germanica," the "Pharmacopœia Helvetica," both bearing date 1872, and the "Pharmacopœia of the United States," 1873. Each of these, he said, though as widely diverse in character as the nations they represent, has an excellence of its own.

Many German formulæ, for example, *Pulvis Glycyrrhizæ compositus*,* *Tinctura colocynthidis*, and *Tinctura Ferri acetici ætherea* have already found their way into English practice, and circumstances may easily increase the number, so that were there no other reason, the pharmaceutist would do well to acquaint himself somewhat with the first named work. The Swiss Pharmacopœia is a model of simplicity. The whole book is but a hundred and eighty pages, the first hundred and fifty-six being occupied with materia medica and formulæ, the remainder being taken up with a series of useful reference tables. Its brevity is partly owing to the curtailment of processes. Formulæ are seldom given for the preparation of chemicals, which in practice are manufactured on a large scale and purchased by the pharmaceutist, but the characters of the preparations are detailed with much minuteness, and the tests for purity given with great exactness.

The newly-revised "Pharmacopœia of the United States," long waited for, appears fully to satisfy expectation, and is in many ways an example of advanced pharmacy. In some little matters at least the compilers of the new edition of our Pharmacopœia might take useful hints from the transatlantic work—amongst minor details, the accented index seems likely to serve a very good purpose in promoting uniformity of pronunciation in Latin names.

The School of Pharmacy.

Mr. Brady then proceeded to comment on the recent educational changes established by the Pharmaceutical Society, and his remarks excited considerable interest. He said—Such, then, are the events that appear to me to mark the recent progress of pharmacy, and I would that I might stop here, but, *per contra*, I find other occurrences fraught with discouragement. At our last meeting I had occasion to advert to the aspects of pharmacy in relation to that higher scientific training which must be kept in view if the members of our craft in this country desire to take the professional position that is open to them, or to stand on the same intellectual level with the same class in many parts of the Continent.

The Pharmaceutical Society with its extended powers and large income, with the halo about it of good work accomplished in past years, seemed then to be the source whence some effort might be expected to remedy deficiencies that are not only the object of remark of foreigners, but are generally acknowledged amongst ourselves. It is not for me to criticize from this chair the action of the Society, except in so far as it affects the objects the Conference was established to promote.

The standard of the examinations adopted by the Society on the passing of the Pharmacy Act was very naturally decided in a spirit of extreme consideration for the circumstances of those who were already engaged in business in one capacity or another. For the preliminary examination of young men *now* entering our ranks there can be no such plea for indulgence, and the recent revision of the examination regulations gave the opportunity for exacting some less discreditable minimum of preliminary education than heretofore. It is surely not too much to expect that a youth proposing to enter a professional or semi-professional calling should have had at least a good grammar school education. But do not the questions that we see in our present examination papers suggest rather a constituency composed of the idle scholars of a village charity school; and the standard of that better period which is to commence at the end of 1874 is in no respect an advance on that which has hitherto been enforced, save that it requires a little extra knowledge of the table-book. I will not detain you with any remarks on the rest of the revised code, indeed I could add little to what I endeavoured to place before you last year, except the confirmation and extension of the views then expressed, which have arisen from continued observation.

I am not presumptuous enough to undertake a review of the recent fundamental change in the relation of the Society to scientific teaching, because, in common with many others, I have sought in vain for the principle on which the step has been based. If it be an indefensible anomaly, as has been stated, that the Pharmaceutical Society should be both an educating and an examining body, there can be no doubt that its educational functions ought to cease, seeing that those pertaining to examination cannot. And if this principle were really acted upon some good might perhaps arise from the stimulus that would be given to extra-academical teaching. But the new arrangements are incomprehensible in this light for *cæteris paribus*, how could any man hope to compete with a rival who was rent-free, and had an annual subsidy in addition to his fees? Looking at the matter in its relation to the advancement of pharmacy in England, it seems obvious that the recent change can only promote that dull, low mediocrity which above all things it should be our aim to avoid. I am far from granting that the union of educational and examining functions in one body is anomalous, for I believe that a closer examination of the subject would lead to the opposite conclusion; but even were it so in this particular case, the anomaly would refer firstly, if not solely, to the Minor or compulsory examination. Education for the Major examination, which is an honorary degree, would certainly involve no anomaly, still less would the provision, which at the present time is of pre-eminent importance, for subsequent and more extended study. The new arrangements point solely to increased facilities for obtaining the minimum amount of knowledge necessary to pass the Minor examination. We are to have our lectures served up in a concentrated form, a *five* month's course guaranteed equal to *ten* according to the old formula, the resulting compound I suppose to be diluted when required for use. Our old acquaintance "Cram" to the front once more, but this time by permission and under the especial patronage of the Society.

The proposal of an eminent pharmaceutist to make the Minor the matriculation examination for students entering the school in Bloomsbury-square may be open to objecton, but it would have remedied any anomaly that might have been supposed to exist in the old arrangement, whereas the new regulations perpetuate its worst features. The adoption of two short elementary courses of lectures in each subject in place of one of much more exhaustive character is in reality a provision for smatterers at the expense of those who wish to pursue their studies beyond the mere legal minimum.

That the education of students for a *compulsory* examination at the expense of the body had become undesirable is true in so far as it is no longer necessary, but the Major examination is *not* compulsory, and on that account it would seem to be equally the duty and the interest of the Society to afford facilities to students to prepare themselves for it. For the same reason it becomes more than ever incumbent upon the Society to offer inducements to young men to pursue a higher education than anything prescribed by mere examination tests. The Society hitherto has had many functions, but if one may judge by recent events, we may fairly look for the time when the Council will have nothing to do but to register the decrees of the Board of Examiners, and to place annually in the Three per Cents. two thousand pounds of the money subscribed by the members for the advancement of pharmacy. It would be well for those who regard the present condition of pharmacy and pharmaceutical education in England with satisfaction, if there be such, to give their attention for a moment to the standard of attainment demanded in other European countries similar in political importance and intellectual standing to our own.

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* *Pulvis Liquiritiæ compositus* of the New German Pharmacopœia.

The pharmaceutical regulations of France and Germany were then referred to, but as we have more than once detailed these in our pages, we shall not repeat the information.

Mr. Brady added, I am far from thinking that so elaborate a scheme as that set forth (the German) is desirable, even if it were possible, in England, but it ought to set us thinking whether results as good might not be attained by means which are already in our power. We are ready enough to urge the claims of our body for scientific appointments, such as those which have recently arisen out of the Adulteration Act, but it seems to me that if first attention were paid to raising a class of men who, *as a body*, were competent to undertake the responsible scientific duties involved in such offices, the public would see its own advantage in according them to us. At present I confess, I cannot see that the mere diploma of the Society is of itself any guarantee of the necessary qualification.

Obituary.

Amongst the events of the past year are some of sorrowful import. The death of one who had identified himself with the Conference from its commencement, and who had served it with a whole heart, even in feeblest health, and that of another, eminent in pharmacy, whose sympathies were ever with us, though his sphere of active life lay in the other hemisphere, are still uppermost in our thoughts:—I need not say I allude to John Cargill Brough and Edward Parrish. Enough has been written concerning both as a memorial of their lives, but it were not fitting that their names should be unremembered here. The services of the late editor of our Year-book it is scarcely possible to overrate. The scheme of the Conference was one which coincided exactly with the bent of his own mind. He came amongst us at our first meeting known only by name as the Editor of the Chemist and Druggist, and from that moment, nay indeed before that, the objects of the Conference had the unswerving support of the journal which he directed. He was the consistent advocate, as indeed it was his nature to be, of the claims of those who seemed likely to suffer from the early proposals in the way of legislation, and in the opportunity for intercourse afforded by our annual meetings he saw the means of softening the differences that at first so grievously divided the general body of chemists to their common injury. Advocacy of high class pharmacy gave way before his sympathy with his fellow-men. Trained as a literary man, his connection with pharmacy was so to speak accidental. He lived the up-hill life of a *littérateur*,—one of exhausting labour aggravated by ill-health, perplexed by the cares of a young family, and saddened by bereavements; yet to the end he fought bravely and cheerfully on.

> "And, oh! when Nature sinks, as oft she may,
> Through long-lived pressure of obscure distress,
> Still to be strenuous for the bright reward,
> And in the soul admit of no decay,
> Brook no continuance of weak-mindedness—
> Great is the glory, for the strife is hard!"

At our meetings his voice was seldom heard; extreme diffidence seemed to prevent his taking much part in discussions. His contributions to our "Proceedings" consist of three papers—one in 1865 "On the proposed introduction of two Systems of Chemical Notation in the 'British Pharmacopœia," one in 1868 "On Narcotine and the Products of its Decomposition," and another in the same year, "On an improved Differential Thermometer." When the Conference determined to publish a "Year-book" his singular fitness for the post of editor was at once recognised, but before he had proceeded far with the preparation of the first volume he was compelled by failing health to relinquish the task. A few months before he had received the appointment of Chief Librarian to the London Institution, and there seemed for a time a hope that the unwonted quiet of his new sphere, the relief from care in pecuniary matters, and the congenial nature of his occupation, might have restored him to physical vigour—but it was not so to be. So gradual was his decline that he cherished almost to the last the idea of attending the Conference at Brighton last year.

To the outside world Mr. Brough was known as the editor of the *Laboratory*, and one or two trade journals: as the sub-editor of *Nature*, as the author of "Fairy Tales of Science," of some serious and many humorous essays, the latter especially, whether in prose or rhyme, models of felicitous handling. To his friends he seemed the reflex of every noble quality he sought in others; if they speak little of his published works 'tis but from the recollection of his inimitable letters; if they mourn in silence 'tis in the heavy sense of loss that time cannot replace.

Probably few of the present company were personally acquainted with Professor Parrish, yet he was well known by name to all, and it was not merely from the position he held amongst our American brethren that he was amongst the first whom the Conference elected to its honorary membership. An able writer, a fluent speaker, and an accomplished pharmaceutist, he excelled perhaps more as a teacher than as an original investigator. Of his general affectionate manner an evidence is seen in the terms by which his students of past years loved to speak of him. He had long intended to revisit England, and looked forward with pleasure to the probability of being able to attend the Conference at Brighton, and even in May last year he spoke of his visit as depending on the completion of a new edition of his book on pharmacy, which was then in the press. Before leaving Brighton I received a letter from him—a kindly message to the Conference, expressing his interest in the success of the meeting, but telling of other duties nearer home that claimed him for the time and prevented his being with us. He alluded to his appointment on a Government commission to one of the hostile tribes of Indians in the South-western States, and it was whilst engaged upon this work of peace and reconciliation that he was struck down by fever. His loss, whether in a professional or in a social capacity, has been and must be widely felt; scarcely a society or a periodical connected with pharmacy in America but has had some eloquent tribute to his memory.

And now, gentlemen, in conclusion, let me remind you that the Conference has but one object—the advancement of pharmacy—and by that means the material and intellectual advancement of pharmaceutists. There is much to be accomplished, both in scientific and ethical relations before pharmacy in this country can stand in the place that belongs to it of right—so much, that it needs a stout heart to face the future; and let no member think that the efforts of others absolve him from his share of the labour. Abilities, opportunities, inclinations differ, but in the body politic there is a sphere of active usefulness for each, a line of duty easily ascertained, from which no man may shrink and hold himself blameless.

Mr. Ekin moved, and Mr. Rimmington seconded, a vote of thanks to the President for his very able and interesting address, which was most cordially carried.

After the President's address had been duly honoured, Mr. Hampson read a paper, entitled

"A PROPOSITION FOR A SIGN TO BE USED BY MEDICAL MEN TO MARK UNUSUAL DOSES IN PRESCRIPTIONS."

This was a very proper subject for the Pharmaceutical Conference to treat, and it was handled by Mr. Hampson very judiciously. He carefully avoided any remarks of an irritating character, insisting, however, with proper firmness on the *right* of the pharmacist to decline to dispense a prescription of an unusual character. The sign he suggested was the addition of the prescriber's initials against the quantity ordered, thus:—

Tinct. Digitalis, ʒ$^{\text{iv}}$. (J.K.L.).

This he thought preferable to the note of exclamation employed in Germany in such a case, giving as eno reason, that the initials might at times be useful for comparison with the actual signature. Mr. Hampson further urged that the addition of the name and address, printed or written on every prescription, as is invariably the case in the United States, would also often prove an advantage. Professor Attfield read a short note on the subject from Mr. Whitfield of Worcester, somewhat to the same effect. A discussion followed in which the President, Messrs. Martindale, Hasselby, Cottrill, Siebold, Rimmington, Greenish, and Savago took part, all indicating a unanimous opinion in favour of Mr. Hampson's views. Mr. Reynolds then moved the appointment of a small committee to draw up a report and sift the subject. This was agreed to, and Messrs. Hampson, Greenish, Rimmington, Benger, and Martindale were appointed. The report was made next morning, and ran thus :—

"That this Conference, having duly considered proposals for the use of special signs to mark unusual doses on prescriptions, and the great advantages to be derived from them, considers that the bracketed initial letters of the prescriber's signature, written immediately after the unusual dose, is the best suited for the purpose.

"This Conference also respectfully urges upon medical men the importance of the prescriber's full name and address being written on *all* prescriptions, to facilitate communication between the prescriber and dispenser.

"This Conference likewise considers it desirable for the dispenser to retain all prescriptions in which initialled unusual doses are prescribed."

No very clear decision was come to as to what should be done with this report, though it was suggested by Mr. Groves that the President of the Conference should communicate it formally to the Chairman of the General Medical Council. Professor Attfield suggested the presidents of all the leading medical societies in addition. Ultimately it was left to the secretary's discretion.

The next paper was by Mr. Louis Siebold, of Manchester, on

"URINARY EXAMINATIONS IN GENERAL, AND THE TESTS FOR ALBUMEN AND SUGAR IN PARTICULAR."

Mr. Siebold first adverted to the importance of pharmacists acquainting themselves thoroughly with such a subject as urinary analysis, and then remarked on some errors very generally committed by medical practitioners —errors which in many cases render the examination quite worthless. A medical man requests his patient to send him a sample of his urine, and a quantity varying from two to eight fluid ounces is supplied in due course and examined. Now if the question to be decided is simply the presence or absence of an abnormal substance, such as sugar, bile, or albumen, the sample of urine thus supplied will answer the purpose. But if the specific gravity be required, or if the percentage of urea, phosphates, chlorides, sulphates, or of any other constituent is to be ascertained, then this mode of examining a sample of urine which does not represent the chemical composition of the entire renal discharge of twenty-four hours is highly objectionable. Portions of urine passed by the same man at different hours of the day or night vary very considerably in their composition, and the quantitative analyses of any such single portion, whether passed in the morning, afternoon, or evening, affords no satisfactory insight into the patient's condition. The whole quantity of urine passed within twenty-four hours should be collected, mixed and measured, and a portion of this mixture submitted to analysis. If medical men forget this fact, let chemists who are called upon to undertake urinary analyses remind them of it, and let them do so persistently as long as their efforts are not successful. Having given some striking instances to show the importance of regarding this rule, Mr. Siebold proceeded to remark on the qualitative tests for albumen and sugar, the two abnormal substances most commonly sought for in urine. The means generally employed for the detection of albumen are :—1. The application of heat; and 2. The addition of nitric acid. Whichever of the two tests is used, the detection of an appreciable amount of albumen is always an easy matter. But when we have to search for exceedingly small traces of that substance, which no doubt occur in the urine of patients long before the chronic state of Bright's disease is suspected or recognised, then the question which of the tests should be preferred becomes undoubtedly one of great importance. Our modern authors have decided this question unhesitatingly in favour of the nitric acid test, which is to be so applied that the acid is poured very carefully into the urine, so that it does not mix with it, but forms a distinct layer at the bottom, above which the hazy zone of coagulated albumen shows with great precision. This is no doubt a delicate test, but numerous experiments had convinced Mr. Siebold that in every instance in which a trace of albumen could be detected by the nitric acid test and not by heat, the failure in the latter test was attributable to the acid state of the urine. He therefore proposed the following modification of the heat test which answers remarkably well. Add solution of ammonia to the urine until just perceptibly alkaline, filter and add diluted acetic acid very cautiously until the urine acquires a faint acid reaction, avoiding the use of a single drop more than required. Now place equal quantities of this mixture into two test tubes of equal size, heat one of them to ebullition and compare it with the cold sample contained in the other test tube. The least turbidity is thus distinctly observed and gives absolute proof of the presence of albumen, the error of confounding phosphates with albumen being out of the question, as they are precipitated by the ammonia and removed by filtration. Proceeding in this way we can find even such faint traces of albumen as will escape detection by the nitric acid test. The test can of course be used in every instance, whilst the nitric acid test is not suitable for urines containing deposits of urates. It surpasses the nitric acid test in general applicability and in delicacy. Next referring to the detection of sugar in urine, Mr. Siebold said the copper test, which is generally acknowledged to be the best and most reliable, is certainly a delicate and reliable one in the hands of an experienced manipulator, but is altogether unsafe in the hands of medical men or of analytical chemists who have not made a close and special study of urinary examinations. Thus we find that in applying the copper test in the ordinary and well known way, sugar is very frequently found where there is none, and is not detected where it is present, and such mistakes are made, too, by analysts of scientific eminence. The important point is to detect the first minute traces of sugar, and thus to indicate the tendency to diabetes. It can hardly be supposed that this disease comes on suddenly, or that a man is quite healthy to-day, and discharges urine containing 5 per cent. of sugar to-morrow. The best test, the author considered, was the modification of the copper test proposed by Dr. William Roberts, in his work on "Urinary and Renal Diseases." It enables an analyst, inexperienced in urine testing, to find $\frac{1}{20}$ of a per cent. of sugar, whilst with a little practice he will soon learn to detect as little as $\frac{1}{40}$ of a per cent. without fear of an error. The test is best performed in the following way :— Heat in a test tube two fluid drachms of Fehling's standard solution of copper, and, when boiling, add five to ten drops of the urine to be tested; if sugar be abundant, as in a decidedly diabetic urine, a yellowish or brick-red opacity and deposit will be produced. If no such reaction ensue, tests for traces of sugar by adding one and a-half fluid drachms of the urine to the hot liquid, heat again to ebullition, and set aside for some time. If no milkiness is produced as the mixture cools, the urine is either quite free from sugar, or at any rate contains less than $\frac{1}{40}$ of a per cent. If the quantity of sugar is very small, viz., from $\frac{1}{2}$ per cent. to $\frac{1}{10}$ per cent., the precipitation of the yellow or red cuprous oxide does not take place immediately, but occurs after some time as the liquid cools, and the manner of the change is peculiar. First, the mixture loses its transparency, and passes from a clear bluish green to a light greenish opacity, looking just as if some drops of milk had fallen into the tube. This green milky appearance is quite characteristic of sugar. In performing this test for the first time, a difficulty may be experienced on account of the phosphates of the urine being precipitated by the alkali of the test solution. These phosphates, however, are thrown down in large flakes, which are seen floating in a clear bluish-green medium by holding the tube between the eye and the light. The presence of sugar does away with all transparency, which gives place to a milky greenish or yellowish opacity. This mode of applying the copper test is simple, very delicate, and thoroughly reliable. It is based upon the fact that urine which is free from sugar never discharges the colour from more than an equal bulk of Fehling's solution. For this reason, a little more of test solution is used than of the urine. Fehling's solution is apt to deteriorate by keeping, so that without any addition it may cause a precipitation of cuprous oxide upon boiling: and for this reason, Lehmann and others have condemned it as a test for sugar. Proceeding, however, in the manner described, the test solution is boiled first, and if it remains clear there is a proof that it is in good condition. If instead, it forms a deposite on boiling, it must be rejected and a fresh supply of it made.

Professor **Attfield**: I quite agree with nearly all that had fallen from Mr. Siebold on this question, but would add the remark that it is highly important in examining urine to remember that these small quantities of albumen and calcic oxalate may occur in urine, temporarily and be of almost no significance. They should also not forget that small quantities of sugar really form part of the normal constituents of urine, as was demonstrated by Brücke and confirmed by Dr. Bence Jones. Not only should the chemist examine the whole of the urine passed in the twenty-four hours, and note the quantity, but he should, if possible, examine it from day to day for several days. Very delicate tests for albumen and sugar are important, but unless we find that sugar and albumen are present from day to day we cannot draw the conclusion that the presence of such small quantities on one or two occasions is of any significance.

Mr. **Ekin** thought that urines are often condemned as containing sugar in consequence of the impurity of the reagents employed.

A paper followed on

"The Amount of Calcic Oxalate Excreted in Oxaluria,"

by Professor Attfield. The author remarked on the importance of the estimation of calcic oxalate, and gave an instance of an examination he had recently made. Two and a-half pints of urine were excreted by the patient between 10 p.m. on one day, and 10 p.m. on the following day. The whole quantity contained 425 grains of urea, an amount beyond the average secreted by healthy adult males, but not more than that commonly given by patients suffering from oxaluria. The sediment, which was not unusually voluminious, consisted of urates and mucus, studded with octohedra of calcic oxalate. No trace of oxalate remained in solution in the urine. The specific gravity of the urine was 1027; in other respects it was normal. The sediment was collected on a Swedish filter, and every trace of oxalate was found to be thus secured. It was then treated with a little warm diluted hydrochloric acid, no particle of oxalate remaining undissolved. Ammonia, added to the filtered acid liquid, gave a precipitate of calcic oxalate which after some time was collected, slightly washed, dried, and weighed. The amount was two-thirds of a grain, or exactly 0·68 (or, in one litre, 0·031 of a gram). Less than a grain, therefore, of calcic oxalate was excreted by this patient in twenty-four hours. Professor Attfield believed that this was not so large a proportion as was sometimes met with.

The **President** observed that an accurate means of estimating oxalic acid in urine is very much needed.

Mr. **Reynolds** said that, although no crystals of oxalate of lime may at first be detected, yet if the liquid be set at rest for a longer time, crystals may appear after all. The microscopist plays an important part, but the chemist is not less essential than he in the investigation.

Professor Attfield then read a paper on

"Ammoniacal Salts and their Usual Impurities,"

by Alfred Payne, F.C.S. This paper gave some experiences in ammonia manufacture gained during the past forty years. He stated that bones, tar, liquor, and gas liquor were the only commercial sources of ammonia.

Having sketched the various processes of manufacture, and indicated the methods of purification, Mr. Payne summarized in the following manner:—

It may be assumed that an ammoniacal salt which has been subjected to this treatment is pure, *i.e.*:—

1. Boiling with animal charcoal, filtering, and recrystallizing.
2. Precipitating its alkaline solution with magnesium, salt, and filtering.
3. Boiling (if a chloride) with excess of hydrochloric acid, or (if a sulphate) with zinc and excess of acid.
4. Treating the *acid* solution with sulphuretted hydrogen and filtering.
5. Treating the *alkaline* solution with sulphuretted hydrogen and filtering.
6. And finally, recrystallizing from an accurately neutra solution, which has previously been cleansed from sulphuretted hydrogen by boiling with a slight excess of acid.

The above treatment ensures a pure salt, from which al the preparations of ammonia may be safely made wher only the *legitimate* commercial raw materials have been used.

But, unfortunately, the competition of trade and the struggle to produce cheap articles lead some manufacturers to utilize waste products as saturators, by which othe classes of impurities are introduced. The commonest o these is the residuum (chiefly chloride of manganese) left i the stills after the generation of chlorine. When this is used, the chlorine combines with its equivalent of ammonium, but the manganese does *not* subside; it attaches itself to the cyanogen of the crude gas liquor (for, of course, these crude saturators would not be used with the distilled liquor), and thus forms mangano-cyanogen, from which results a mangano-cyanide of ammonium, a salt which can scarcely be separated from the various preparations in which the ammonia is afterwards used.

To the sesquicarbonate it imparts a red tint, often exhibited in thin lines or layers on the fractured surface; all such ammonia should at once be rejected as unfit for use.

Gypsum, or sulphate of lime, is sometimes used as a saturator in districts where mineral acids are not made; portions of this, and sometimes of sulphide of calcium, often remain as impurities in the resulting salt, but these are easily separated by careful recrystallization.

In conclusion, the pharmacist has to do with only liquor ammoniæ, sesquicarbonate of ammonia, hydrochlorate of ammonia, nitrate of ammonia.

The liquid preparations he will himself prepare from the above.

Liq. ammoniæ should make a clear and colourless solution with either nitrate of bismuth or nitrate of silver, which shows the absence of hydrocarbon oils.

The nitrate of ammonia should be scrupulously neutral, or it will be unfit for making the anæsthetic gas. For further examination each of the preparations should be tested thus:—

For phosphates make the solution slightly alkaline, and try magnesia salt.

For arsenic try the acid solution in Marsh's apparatus with magnesium.

For other metals try an acid solution with sulphuretted hydrogen, and then an alkaline solution with sulphide of ammonium.

If the ammoniacal preparations will pass this ordeal, and meet these reagents, without cloud, tint, or other indication of impurity, they may be regarded as perfect, and fit for any purpose in pharmacy or the arts.

Professor **Attfield** pointed out that volcanic ammonia had not been included in the sources of this chemical, and Mr. Booth (Heckmondwike) added the waste product of woollen manufacture as another source.

Mr. **Coupland** (Harrogate) mentioned that he had met with some benzoate of ammonia, which had a coal tar odour.

Mr. **Williams** remarked that benzoic acid produced from gum, though properly used for medicinal purposes, is not entirely true benzoic acid, but contains a considerable quantity of cinnamic acid. For strictly chemical purposes, not for medical purposes, benzoic acid produced from urine is the pure body. However, the price of gum having materially decreased of late years, he believed the acid made from it had been quite as cheap as that made from the urine of horses and cows. The acid made from the urine of cows comes principally from Germany, while that made from gum is principally prepared in England.

The next paper read was one by Mr. J. J. Nicholson, F.C.S., of Sunderland, on

"The Composition of the Air of Sewers and Drains."

Mr. Nicholson detailed two sets of experiments he had made on the air of the sewers of Sunderland. The first were made in September, 1871, when the principle of the construction of sewers was directly opposite to that now insisted on. According to the highest sanitary authorities of twenty years ago the sewerage system was perfect, every joint perfectly cemented, every outlet securely trapped and every precaution taken, at a great expense, to keep the enemy underground. The second set of experiments were made in 1873 after a new system of sewerage had been introduced, the principle of which was to obtain an opening to the outer air at intervals of every 100 yards of the sewer and its branches. Mr. Nicholson stated that he had found the ventilation better effected, the nearer the openings were to the ground. The comparison of the experiments with each other, also with atmospheric air and with certain reports of the examination of sewer gas in London and Paris is shown in the following table :—

	Nitrogen.	Oxygen.	Carbonic Acid.	Sulphuretted Hydrogen.	Ammonia.
Atmospheric Air ...	78·96	21·00	0·04	None	Traces
Sunderland, 1871 ...	81·1	18·4	0·5	Traces	Traces
Sunderland, 1873 ...	80·35	19·37	0·23	None	0·05
London, 1858	79·96	19·51	...	Traces	...
Paris, 1858	78·86	17·93	2·29	0·92	...

The difference between the two examinations of the sewer gas in Sunderland is very striking, showing a remarkable improvement effected by the adoption of the principle of abundant ventilation. An animated discussion followed the reading of this important paper, relating chiefly to the best and most convenient form of shaft for ventilating sewers.

Mr. S. R. **Atkins**, of Salisbury, contributed three short notes on subjects of pharmaceutical interest. The first, on the preliminary examination, advocated the substitution of the certificates of the Universities of Oxford, Cambridge, or Durham, or those of the College of Preceptors, for that examination. The second, on the Medical Profession, urged that medical men should entrust to us their dispensing, we, *per contra*, guaranteeing not to poach on their special preserve in the shape of counter-prescribing. The third, on Pharmaceutical Titles, indicated that some more definite distinction was desirable than that now existing between "Pharmaceutical Chemist" and "Member of the Pharmaceutical Society." The first of these notes only produced any discussion, and that not of much importance.

Mr. **Savage** pointed out that such a substitution would be a very serious matter, these University Examinations occupying a week, while the present Preliminary only occupies three hours. Mr. Atkins had referred to "negligence of local secretaries," and "possibility of collusion." In reference to these intimations, Mr. Reynolds remarked that before doubts were cast upon the integrity with which local secretaries perform their work, some reliable evidence should be forthcoming.

"ON THE ABSENCE OF MORPHIA IN THE PETALS OF PAPAVER RHEAS."

This paper, by Professor Attfield, described some very exhaustive experiments he had made which proved that not a trace of morphia could be found in the petals of the red poppy. This was in opposition to the suspicions of Pereira, Garrod, and Bentley. Professor Attfield, however, believed that the alkaloid was to be found in the capsules and other parts of the plant, and he suggested as an interesting subject of inquiry, an examination of *papaver somniferum*, with the view of ascertaining whether or not morphia is contained in the petals of white poppies specially grown for opium.

A short paper followed by Mr. C. Ekin, F.C.S., on the

"HYDRATION OF EXTRACTS."

This was in answer to the querry (No. 66) on the Blue Paper issued by the Conference—namely, "Is it possible to assign a definite degree of hydration to medicinal extracts with a view to uniformity of strength?" Mr. Ekin believes this quite possible, certainly with some, if not with all extracts. He finds that extracts of fair average consistence for pill making, when subjected to the heat of a water bath, in the cases of belladonna and hyoscyamus lose 20 per cent. of their weight, and in the case of conium, 25 per cent. The plan adopted was to spread the extract very thinly on a thin platinum capsule, and dry at a temperature of 212° until it ceased to lose weight. Various experiments with the same extract gave in this way very constant results. At first he operated on quantities of ten grains at a time, but found that several hours were then required for complete desiccation, whereas if only one or two grains were used the time required was little more than half an hour. The same paper suggested that Wanklyn's method of limited oxidation by means of an alkaline solution of potassium permanganate might be applied with good results to the assay of such medicinal extracts as are dependent for their activity entirely, or for the most part, on certain alkaloids—all alkaloids yielding a certain portion of their nitrogen as ammonia. Also that it might be made available for the determination of the relative values of the first year's and second year's plant of hyoscyamus, about which a good deal has been taken for granted but nothing yet really proved. And again in the case of conium, to determine which has the greater activity, a tincture made from the fruit or from the leaves. Of course, the difficulty lies in the complete and easy separation of the vegetable proteides of the plant juices.

A short discussion followed in which Mr. A. H. Mason, the President, and Mr. Williams took part. Mr. Mason suggested the possibility of having all extracts in powder.

This paper concluded the first day's programme, and the Conference adjourned. A dinner was held that evening, which we shall refer to further on.

On Wednesday morning, September 17, the first paper read was by Mr. T. B. Groves, F.C.S., on

"SOME FURTHER EXPERIMENTS ON NEPAUL ACONITE, AND ON THE CHARACTERISTICS OF THE ACONITINES."

There can hardly be a doubt, we think that this paper was the most important contribution to chemico-pharmaceutical research presented to the Conference. It is impossible to abstract it, especially as to give a clear idea of the author's investigations it would be necessary to give a summary of the experiments of various chemists during the past twenty years. Singular differences have been traced between various specimens of the alkaloid, aconitina, and foreign chemists—Von Schroff, of Vienna, and Flückiger, of Berne, especially—have investigated this matter. They have concluded that two different alkaloids exist; one they call the true aconitina, and the other false or pseudo aconitina. Mr. Groves' experiments extend over several years, and his most recent ones have been carried out on a very large scale. He appears to have definitely settled the existence of two distinct alkaloids, or rather, two series of alkaloids, for others are involved in this inquiry, the one series yielded by *Aconitum napellus*, and the other by *Aconitum ferox*, or some other Indian aconites. In the paper to which we are referring Mr. Groves supported these conclusions by most elaborate evidence, which will doubtless be judged by those few chemists whose investigations render them competent for the task. Mr. Williams, who has himself experimented on the same subject very considerably and for many years, bore high testimony to the importance and ability of the researches instituted by Mr. Groves.

Another paper read the same day, remarkable for its useful practical character was by Mr. Louis Siebold, Lecturer on Pharmacy at Owen's College, Manchester, and was entitled "Report on the Purity of Commercial Specimens of Officinal Acids." The paper treated, not the acids of commerce, but those sold expressly as "pure," which, however, is often an incorrect description of them. "Pure" hydrochloric acid is most liable to contain arsenic and free chlorine. As the smallest trace of the former impurity may be of great importance, it was recommended to test for it by means of sulphuretted hydrogen. It is not sufficient to add a solution of H_2S, but the acid should be completely saturated with the gas. After standing twelve hours, the precipitate, which will be formed in any case, must be obtained by filtration, washed, dried, and fused with carbonate and nitrate of sodium; the fused mass dissolved in water, filtered, mixed with pure nitric acid in excess, boiled and then tested with ammonia and nitrate of silver, or with sulphuretted hydrogen. By this process arsenic is often to be found in hydrochloric acid, which, tested according to the directions of the Pharmacopœia, would seem to be quite pure. Solution of indigo was recommended as the best test for free chlorine. Mr. Siebold described processes for preparing perfectly pure hydrochloric acid. "Pure" sulphuric acid sometimes contains arsenic, lead, and oxides of nitrogen, but it is not found contaminated to nearly the same extent as is hydrochloric acid. Nitric acid may be prepared perfectly pure quite easily from the commercial acid by distilling such of good quality, and 1.42 sp. gr. with perfectly pure nitrate of potassium. Although the process is so simple it is almost impossible to obtain this acid free from traces of H_2SO_4. Manufacturers do not reject the early distillation long enough or they carry it on too long. Often the nitrate of potassium employed is not of absolute purity. The annoyance of this trace of H_2SO_4 is chiefly felt by the analyst, but can hardly be of much consequence in medicine. Hydrocyanic acid of the Pharmacopœia strength should contain 2 per cent. of HCN. But the variations in this respect are remarkable, sometimes not more than ½ per cent. being found. This arises from imperfect stoppers, allowing HCN to escape. Acid kept for dispensing should be most carefully stoppered, and tied over with bladder or gutta-percha tissue, and should also be frequently subjected to volumetric analysis. Mr. Siebold reserved the consideration of sulphurous acid, phosphoric acid, and acetic acid to a future occasion.

The same author also contributed a short paper describing

"A NEW TEST FOR MORPHIA,"

which, he said, greatly exceeds in delicacy all tests hitherto known. When applied to the detection of opium in stomachs, etc., it is necessary first to separate the alkaloid from other substances. The test is as follows:—Heat the suspected substance with about six drops of pure sulphuric acid, and then add a very small quantity of pure perchlorate of potassium. If morphia be present, the liquid immediately surrounding the perchlorate will at once assume a deep brown colour, which will soon extend over the greater part of the acid. Warming increases the delicacy of this test. 0·0001 gramme of morphia is distinctly recognised by this process, and no other alkaloid yields a similar result. It is essential, however, that the perchlorate should be perfectly free from chlorate.

Some papers of a very "high" chemical character, by C. R. A. Wright, D.Sc. Lond., lecturer on chemistry in St. Mary's Hospital Medical School, were read by Professor Attfield. They were entitled respectively "New Derivatives from Morphia and Codeine," "On the Essential Oil of Orange," and "On the Essential Oil of Nutmeg." These detailed some very elaborate researches interesting especially to scientific chemists.

Mr. G. A. Keyworth, Hastings, presented some notes "On the Presence of Bromine, Iodine, and Silver in Sea-water." His experiments indicated that silver was undoubtedly diffused through the ocean, and can be obtained by evaporating a large bulk of the water, and treating with sulphuretted hydrogen, albumen, and heat. Sulphide of silver is entangled in the albumen, and the metal may be separated by cupellation. The author, however, gave no hope of the discovery of a remunerative process. In his experiments, however, he had been able clearly to detect iodine, and still more distinctly, bromine.

Mr. Savage's paper on "Alchemy in Relation to Pharmacy" is printed in full on another page.

A paper was read by Mr. Alfred H. Allen, F.C.S. (Sheffield), on the "Detection of the Adulterations of Tea."[*] The author, in his official capacity of analyst to the borough of Sheffield, had a considerable number of specimens of tea under his notice, the specimens having been brought by the tea-dealers themselves, with a view to having the tea condemned if found to be adulterated. Mr. Allen said his object was more to work out a technical method of testing tea for adulteration than to establish the actual composition of genuine tea. Having described the methods used to analyze tea, and explained the process he adopted, Mr. Allen remarked that he found black tea was adulterated with exhausted leaves, redried, and made up with gum, some of the black being made up without gum. The green tea was coloured with Prussian blue, and contained exhausted leaves, strongly coloured by the same material, while an inferior quality of green was strongly faced with French chalk, a little Prussian blue, etc., but although marked as inferior and strongly faced, was not adulterated. In one instance, where a shopkeeper advised his customer to buy black tea at 2s. per lb., equal to 2s. 6d. tea sold elsewhere, it was found to be much adulterated, and into it, to roughen the flavour, the shopkeeper put a pinch of "Lie Tea," made up of catechu, starch, sand, metallic iron, graphite, magnesia, etc. Mr. Allen concluded with various suggestions for detecting the adulteration of tea, especially with regard to exhausted leaves, etc. Some discussion followed, Mr. GREENISH (London) suggesting that the botanical character of the tea leaf should be studied, and stating that he had not yet met with a specimen of green tea that was not faced with some kind of pigment, and even iron filings and granite had been found in tea. He considered that microscropical inspection, united to a good knowledge of the leaf, was the better method of finding out adulteration, rather than depending on the amount of tannin contained in tea deduced by chemical analysis.

Other gentlemen spoke, and Mr. ALLEN replied, agree- with the views expressed by Mr. Greenish; and, answering other remarks, stated that he had found China clay in tea as well as French chalk, turmeric, etc. He had also found green tea without any colour. Mr. Allen was warmly applauded, and received a cordial vote of thanks.

The other papers read were "Contributions to the History of Potable Waters—No. 2," by Mr. M. M. Pattison Muir, F.R.S.E.; "Some Starches Microscopically and Polariscopically Considered," by Mr. H. Pocklington (Leeds); "An Improved Solution of Kino," by Mr. George Ellinor; and the last paper "Analytical Notes on Rhubarb, Turmeric, and Mustard," by Mr. W. L. Howie, was taken as read, owing to want of time.

On the evening of the first day's conference a dinner was held at the Victoria Hotel, Mr. F. M. Rimmington in the chair. About seventy sat down, and the entertainment seemed to give satisfaction to every one. It was a most pleasant *réunion*, and the whole of the company soon settled down into an excellent humour, which never flagged. After the toasts of the "Queen" and the "Prince and Princess of Wales," the Chairman proposed "the President and Officers of the British Pharmaceutical Conference." Mr. Brady, Professor Attfield, and Mr. Baden Berger responded. Mr. Bell proposed "the Pharmaceutical Press," which was acknowledged by the editors of the *Pharmaceutical Journal* and *Chemist and Druggist*. The Vice-chairman, Mr. Rogerson, next proposed "the Health of the Visitors," which brought up Dr. Edwards, of Montreal, formerly of Liverpool. Mr. Savage proposed "the Chairman," and Mr. Williams toasted "the Vice." Mr. Cottrell added "the Local Secretary and Committee," and Dr. Parkinson being absent, this was coupled with the name of Mr. Alderman Hicks, who responded humorously, and reminding the assembly of the Licensing Act, and that eleven p.m. had arrived, concluded by suggesting "Our next merry meeting," which was honoured, and then the company separated.

An excursion to Bolton Abbey on the 19th, to which the local committee invited the members of the conference, was, we hear, a most enjoyable trip, but circumstances precluded us from sharing in it.

We should add that the next meeting of the conference will be held in London. The time of the year is not yet decided. That meeting must be made a great success, and we are quite confident that metropolitan members, with Dr. Attfield as the permanent secretary, and Mr. Carteighe as special secretary, will make such efforts as shall fully compensate for the disappointment of not visiting Belfast. Mr. T. B. Groves, F.C.S., of Weymouth, is the president elect, a gentleman most thoroughly qualified for the position, and one who will do honour to the office.

THERE is a story of a doctor who went to settle in a village out West, and on the first night of his arrival was sent for to attend a sick child. He looked at the little sufferer very attentively, and then delivered this oracular opinion: "This hyar babe's got the small-pox, and I ain't posted up on pustules. We must approach this case by circular treatment. You give the little cuss this draught. That'll send him into fits. Then send for me. I graduated on fits."

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[*] Our abstract of this paper is extracted from the *Leeds Mercury*.

MR. SANDFORD'S ADDRESS TO PHARMACEUTICAL STUDENTS.

THE following was Mr. Sandford's inaugural address to pharmaceutical students on the evening of October 1. The speaker was very warmly received, and his address was listened to with close attention, and heartily applauded:—

Mr. President, Ladies, and Gentlemen,—

My colleagues in the Council of the Pharmaceutical Society at all times extend to me great indulgence and great favour—great indulgence in bearing with my many shortcomings; great favour in thrusting honour upon me—sometimes honour which in my judgment should be given to others, especially when it involves a duty to be performed which would be better performed by others than by me.

During my long connection with the council, I have seldom had a higher honour conferred on me than in being entrusted to give a few words of welcome to the students who are this day entering on a course of technical instruction provided in this institution by the Pharmaceutical Society.

Under protest I have accepted the trust, but I shall need the same indulgence from this meeting which I have told you I so uniformly receive in the council, for the remarks I am about to offer will neither be made interesting by examples of the wonders of science, nor adorned by flashes of wisdom crystallized in the poetic language of gifted men.

It is my purpose rather in a very plain way to speak to the young students of the necessity of embracing the opportunities now within their reach of acquiring such knowledge as will enable them in after life to stand side by side with men of science — opportunities of mental culture which must assuredly give them a better position among their fellow men.

There is, perhaps, one circumstance connected with the opening session which seems to make it appropriate that an old member of council should address you this evening, and I am, therefore, the more reconciled to taking on myself the duty.

The circumstance to which I allude is this epoch in our history when the Pharmaceutical Society ceases to have a *pecuniary* interest in the education of rising pharmacists.

To me this is an especially interesting circumstance. Some of you may remember that when my friend Mackay delivered his admirable address at the opening of the session in 1871, he startled his audience by anticipating this change; but though I had long contemplated this, and spoken of it as the right and proper course for the society to take, I was not sanguine enough to expect to see it accomplished so soon.

I describe this change as exclusively the relinquishment by the society of *pecuniary* interest in education, I mean pecuniary benefit therefrom, and I cannot too strongly guard all who may feel anxiety on the subject against supposing for a moment that the change implies the relinquishment of any other interest.

I feel it the more necessary to do this, because I am sorry to find an adverse opinion has recently been expressed by one whose judgment deserves all consideration. The ex-President of the Pharmaceutical Conference prognosticates that "*the recent change can only promote that dull, low mediocrity which, above all things, it should be our aim to avoid;*" that instead of stimulating "*extra-academical teaching,*" we shall put it beyond the power of others to compete with professors, who will be subsidised free tenants of the society's premises. I must confess that the advantages given to our professors are at the outset diminished rather than increased; and as to the effect of their possessing any advantage over other teachers, it is but reasonable to suppose that circumstance would necessarily compel greater exertion on the part of "*extra-academical*" teachers to make their schools efficient and attractive.

Thirty years ago, when education was declared by the founder of this society to be the only true foundation on which we could depend, no means of diffusing that education existed, save in the establishments of a few honourable exceptions to the then dark condition of British pharmacists. Apprentices were taken professedly for instruction "*in the arts and mysteries*" of the trade; but, practically, chemistry as a science, or even chemistry as applied to pharmacy, was never taught.

The education of a chemist and druggist was then virtually five years' apprenticeship in the country, and three or four years' employment as an assistant in London.

I look back to this as my own experience, for I had become a member of the Pharmaceutical Society, being in business and fully occupied, before the School of Pharmacy existed. I look back and contrast my opportunities with those of the young friends whom it is my privilege to welcome here this evening.

To supply the deficiency then existing, the society wisely employed the funds at its disposal to establish a public school, at which a knowledge of chemistry, pharmacy, botany, and materia medica might be acquired.

Education was not compulsory, and at the first awakening it could scarcely be expected that private teachers would risk their time and money to found schools at which it might be acquired. So the society stepped in; first, with lectures by the best men of the day—Pereira, Ted Thompson, and Fownes—to which students were admitted at an almost nominal fee, and afterwards with the School of Practical Chemistry.

A good criterion of the success of such an institution is to be found in the position taken by its pupils in after-life, and I am proud to look through the list of honourable men who have since issued from this school imbued with a love of science, advancing the credit of pharmacy throughout the length and breadth of the land, promoting the desire for, and carrying the means of education to all quarters of Great Britain—men who shine forth as bright examples to the youth of the present day, the brighter because education which is now compulsory was with them but voluntary.

Circumstances are altered now. The public expect to find intelligence in those to whom they entrust matters affecting their health, nay even their lives; and the Legislature, in a protecting spirit, says:—

"*It is expedient for the safety of the public that persons keeping open shop for the retailing, dispensing, or compounding poisons, and persons, known as chemists and druggists, should possess a competent practical knowledge of their business, and to that end . . . should, before commencing such business, be duly examined as to their practical knowledge, etc., etc., etc.*"

There is a homely old saying that one man may take a horse to the water, but a hundred cannot make him drink; and so it might have been said, prior to the passing of the Act of 1868, as to the acquisition of pharmaceutical knowledge. Not that the society had any reason to complain of want of progress, even under the voluntary system; it was sufficient to provide for, promote, and ultimately obtain such compulsory enactments as now *compel* all to drink at the fountain of knowledge. I may, perhaps, be told that the compulsion does not go far enough; that it compels only the acquirement of as much knowledge as will enable a candidate to pass a short ordeal in the examiners' room. This may, indeed, to some extent be true. But where is the remedy, or rather where is the supplementary force which is really and truly to advance pharmacy, and consequently pharmacists, to a proper position in this country?

That remedy has been pointed out by those good men whom I have mentioned, and now it lies with you, young gentlemen, who are entering this establishment, to perfect the knowledge which I hope you commenced storing during your term of apprenticeship; when I say "*perfect*" your knowledge, I use that expression in a very limited sense, for I am sure the oldest and most accomplished pharmacist in this room will agree with me that in science a man's knowledge is never *perfect*, the earnest pursuit of it leads us on, *entices* us on, and convinces us, day by day, that we have yet more to learn.

It is said, "*Poets are born, not made;*" but it is not so of chemists. Careful reading, honest work, many failures must be the training of the successful student: the very failures are of infinite service if we seek for the "Why and the wherefore" of those disappointments. The non-attainment of an expected result may sometimes lead to a most interesting discovery, and, to an observant mind, will be no discouragement, though it may for the time perplex. In tracing the cause of present failure, future success is rendered more certain and more gratifying.

I remember listening to the eloquent address given to the students in this room by my accomplished friend, Mr. Brady, to whom I have already had occasion to allude, but less in accord than I now do, an address which was calculated to make all other men fearful in venturing on the task he so well performed on that evening, and if all the noble sentiments uttered by him were forgotten—which God forbid they should be—save one word, that word, that golden word—"thorough"—would be worthy to be the motto both of students and teachers. Taking that as a motto, none would rest content with that surface polishing, of which we have heard so much of late, under the designation of "cram"—that little superficial teaching which may possibly carry a man through his examination, but which can never properly qualify him for the high and onerous duties he is about to undertake.

I told you, gentlemen, that the society relinquished but one interest in this school in making the recent change; and I may tell you, with equal confidence, that their full determination is that the education imparted in it shall be *thorough*.

The known, and often published, opinion of our professors on this point should at once be an assurance of this.

I even fear their continued assertion that they do not undertake to "*prepare* students for the examination," may be taken too literally, and deter some young men from becoming their pupils, because, undoubtedly, it must be a great object with all who enter our business to be able to pass the examination.

I admire the honesty of the professors who make this bold disclaimer; but I conceive it is not literally true. I venture, on the contrary, to assert that they do prepare candidates for the examination in the best possible way. What they really mean, is that they do not help a candidate to *cheat* the examiners. In the School of Practical Chemistry, for example, I have heard of students—no, I will not so misapply the word *student*—but I have heard of young men endeavouring to select for themselves from the curriculum arranged by Professor Attfield, subjects on which they thought it most likely they would be examined. If they had previously mastered the elementary part of the course such a selection might be well enough; but what I understand the professor to mean when he says he does *not prepare candidates for examination*, is simply that he does not consent to any such alteration of his curriculum unless he is fully satisfied that the applicant has mastered the rudiments; and for myself, as a member of the council, I may say that if I had thought otherwise, the vote which I gave so heartily for his appointment would have been unhesitatingly withheld.

That you must pass the Minor examination is a great truth patent to all you who are now entering on this special part of your education—this which I may call the public part of your training.

That examination is the gate which will admit you, and without passing which you cannot be admitted to the roll of qualified practitioners of pharmacy. But remember, I pray you, that to get through the first gate should not be the *ultimate* object of your exertions. Having succeeded in passing it, you will indeed be safe so far as having secured the right to assume the title and practise the trade of a "chemist and druggist;" but I trust there is not one whom I am now addressing who will rest content without passing the second gate, or Major examination, and obtaining for himself the diploma of a "pharmaceutical chemist."

I think I hear some one saying, "*What good? I only want the right to carry on my business.*"

The man who only wants that right is, I fear, one who would be content to be sufficiently "*coached*" up to cheat the examiners into the belief that he was a qualified man. He forgets that, as I said just now, the public expect to find intelligence in those who dispense their medicines. There is in store for him a *continual examination*, by his customers, the failing to pass which would be as humiliating as the failure to pass his examination in this house.

It cannot for one moment be disputed that year by year the public are becoming better acquainted with the relative value of the two titles, "pharmaceutical chemist," and "chemist and druggist."

This fact was very forcibly brought home to me on one occasion when I was working hard to promote the passing of the Pharmacy Act. You know, of course, that it was deemed necessary to enfranchise these two classes which I have mentioned. Our trade is, unfortunately, but a small one, and there are many localities in which the population is so scanty, or the general health so good, that no great demand for physic rewards the chemist of the district.

I was calling on a member of Parliament one morning, and endeavouring to enlist his sympathy in our cause, when, in reading the copy of the Bill I had put into his hand, he suddenly said:—

"*But what does this mean, I see you have two grades—two examinations?*" And when I told him why it had been deemed only just and necessary to make such a provision, he said, "*Oh, I entirely agree with you as to the necessity of enforcing education; but I don't like these two grades. I suppose you think London and large towns must have pharmaceutical chemists, and chemists and druggists will be good enough for the little places. I think our lives in the country are as valuable as yours in London!*"

Although I might be able to convince my friend that the "Minor examination" would be such as would ensure sufficient technical knowledge in the man who passed it to make it a safe dispenser, I left him imbued with the idea that all dispensers should be pharmaceutical chemists. I give you this anecdote just to show the tendency of public opinion, and not to depreciate chemists and druggists, of whom we have doubtless many excellent specimens.

I might surely, in urging you to the more extended prosecution of study, depend very much on the greater interest which it must give you in the every day occupation of your future lives. It is not given to all men to astonish the world by brilliant discoveries, but short of that, it must be admitted that the daily avocations of a pharmaceutical chemist afford a rich field for intelligent observation, a great opportunity for usefulness to our fellow-men. You cannot think too highly of this latter fact.

In entering the profession on which you are now starting, you have before you a high and honourable occupation, in which it will be yours to administer to the necessities of mankind in a most important particular.

A dispenser of medicine is a member of the noble medical profession. Always remember, I pray you, that, although members of that profession, you must not account yourselves qualified to assume the position or to exercise the duties of its higher branches, or you will cease to acquit yourselves honourably in your department.

In the army there are generals, field-officers, captains, and subalterns, each with their appointed duties, and the success of a campaign depends on the concerted action of the different grades. So in the medical profession. It is for the physician to prescribe, and the dispenser to obey his instructions. According to my judgment, the moment the dispenser attempts to reverse this order of things, and to usurp the province of the physician, he gets into mischief; he assumes a duty for which he is not qualified, to his own disgrace, to the public disadvantage, and manifestly to the disadvantage of his class. Nothing can be more certain than that it is of the utmost importance that the prescriber should have perfect confidence in the dispenser, that there should be a mutual good understanding between them, and it is to me equally certain that this confidence and this good understanding must be destroyed if the dispenser be not a man of intelligence, an honourable worker in his department, and careful not to outrage the discipline of the profession.

Possibly some of my older friends here may say, "*Why dwell so much on professional ethics, or rather, why lead these young students to imagine that they are entering a profession? —Chemists, after all, are but tradesmen!*" This may, perhaps, be said by some who in their vocation have achieved for themselves a better claim to be regarded as professional men than the generality of their brethren. I am not quite sure that our worthy President will not move a vote of censure on me for misleading rather than guiding the students of the session.

My young friends, I would by no means mislead you. Ours is indeed a trade, and if you lose sight of that fact, or try to obliterate it from your minds, you will commit a grievous error. It happens that the occupation of a chemist has both a professional and a trading character, and while, on the one hand, we must endeavour to acquire such an amount of special education as will fit us for the more elevated part of our duties, we must, on the other, avoid being thrown off our balance by any false notion of dignity.

I was struck the other day by the remark of a man who had recently lowered himself, according to the judgment of some of his associates, by the purchase of, and most devoted attention to, a retail trade. He said, "*I do not look to my occupation for dignity, I take my dignity to my occupation.*" And so you should carry to the counter that sound technical knowledge which you are about, I hope, to acquire here, applying it earnestly to the wants and welfare of your customers, and adding thereby dignity to the trade on which you have entered.

There is in trade itself nothing which is beneath the dignity of an educated man—nay ! there is in our trade especially great scope for winning regard and esteem ; it is only in descending to that which is dishonourable that a man becomes dishonoured. I know it is the belief of some that when you educate a man beyond a certain point you give him aspirations which cannot be satisfied in trading pursuits ; that mental culture and manual labour do not associate. If that be true, it becomes a very serious question to whom we shall in future look for labour, now that mental culture for all is the universal cry.

The labour falling to our lot is skilled labour. Give an uneducated man a prescription to dispense in which the ingredients require to be put together in a certain order, and the mixture will probably be sent to the patient with masses of resin adhering to the sides of the bottle, or a powerful alkaloid precipitated. Let the same mixture be prepared by one who understands his business, and the result will be entirely different. The *unmixed mixture* might in some instances fail in doing the work desired by the prescriber, and in some even do mischief ; but in any case such variations in the appearance of medicine destroy the confidence of your customers, militate against your individual success, and bring discredit on pharmacists as a class.

Gentlemen, I need say nothing to you who have to live by your trade of the mischief thus falling on you individually, but I should like to impress on you the high moral obligation of sustaining the credit of your order.

The better qualified you are by education to fulfil your duties, whether you call them professional or trade duties, the more completely will you do this. The higher your capabilities, the more completely will that spirit of jealousy, which in years gone by kept "two of a trade" apart, disappear ; the more knowledge you possess, the more anxious you will be to make that knowledge the common property of your class.

This has, I think, been proved by the gatherings of the Pharmaceutical Conference. Associating with your fellow-students in the laboratory, the angles which are apt to protrude in isolated shops will wear down, and it will be to you not only a school of chemistry, but also a refining and elevating society. I have been naturally brought much in contact with the professors, and it has been no small pleasure to me to hear them speak of their classes ; of the marked intelligence and gentlemanly feeling pervading their pupils ; you have heard pretty much the same from them this evening, but less in detail than it has reached me. I rejoice greatly in this, because although one has undoubted pride in pointing to brilliant examples, perhaps the greater and more abiding pleasure springs from a contemplation of the *general* advancement of the class to which we belong.

Various circumstances may have helped us on in this matter ; there has indeed been progress in society generally, but I cannot help attributing our special improvement very much to the fact that of late years uneducated youths have been kept out of our business by the necessity of passing the Preliminary examination at the outset. I hope, even in my time, to see the day when no master will sign articles with an apprentice until he has given such evidence of early training.

This is indeed a matter of much greater importance than you may think. Once launched in the business as an apprentice, a youth has a duty to his master which must be performed, and if not well performed, the master's duty to his apprentice—*which I would most emphatically affirm to be no less binding*—will be the less likely to be liberally carried out. Thus the time at an apprentice's disposal for study, even under the most favourable circumstances must have a limit, and will scarcely more than suffice for necessary technical study.

How then will he fare if during his term of pupilage he has to prepare for his Preliminary examination ? He will be like the man who has to carry through life a dead weight of debt, always pressing him down, always debarring him from seizing opportunities at the right time.

But this is not all ; good school training prepares the mind to receive impressions, to discriminate between them, and to utilize the information presented to it. The lad whose mind has not been so cultured is altogether at disadvantage when he enters on the true business of life, and so, beyond the fact of having arrears of work to perform, is less able to perform well the proper work of the season.

My duty this evening is to speak to the students who are about to avail themselves of the opportunities offered by this institution ; but I cannot deny myself the pleasure of reverting for a moment to those who have been introduced to us as the prize-men of the past session. They have been congratulated on their success by more able tongues than mine, but no one can more heartily bid them "God speed" on their future career than I do. Their names have been added to that list of worthies which adorns the calendar of the Pharmaceutical Society, and the very fact of their being so enrolled must ever be an incentive to them to press onward in the course they have so well begun. Every step in the right direction will advance them, and advance the body to which they belong, and I trust to see them in their turn taking that active share in the work of our Society which so many of the prize men of former years have already taken. To you of the future I would hold them up as encouraging examples. You, who will be their successors in the lecture-room and laboratory, must all strive to be their successors in the prize list, that those who are spared to come here twelve months hence, to see the medals and certificates of the next session distributed, may as heartily congratulate you. I say you must all strive ; I know you cannot all win, according to the common notion of winning ; that if there be but one silver medal for competition in a class, it is an impossibility for more than one man to take it ; but if all the competitors cannot *win*, all must *gain* by the process of striving.

OPIUM IN CHINA.—The British Consul at Canton, Mr. Robertson, remarks in his report this year that time has not justified the anticipations expressed a few years since, that there would be such an increase of native-grown opium as would seriously affect the Indian product. Large quantities are produced in Szechuen and several other provinces, but the policy of the Government is to discourage the growth, and it has lately been denounced in a fresh edict. Owing to the want of strength and flavour in the native opium, it cannot compete with the foreign, and is chiefly used for mixing purposes by the very poor, who cannot afford the more expensive kinds. The Consul says that the use and abuse of opium are much exaggerated. Taking the total import into China at 12,800,000 lbs. in the year, what is that for a population numbering about 400 millions ? He states that the use of opium is confined to narrower limits than is generally supposed, and excess in its consumption is the exception, and not the rule. To confirmed smokers it becomes a necessity of existence ; by others it is regarded as a luxury. Mr. Hughes, British Consul at Hankow, gives the Chinese credit for a growing preference of the native opium on account of its mildness, which makes it easier to give up its use temporarily or abandon it altogether, without serious effect upon the health. He says the production of native opium is very considerable ; and his colleague, M. Blancheton, after a visit to Szechuen, estimates the net value of all the opium grown in that province at about thirty-five million taels sycee (the Hankow tael averages a fraction over 6s.), but the figures are given as "anything but certain." Mr. Morgan, Consul at Tientsin, thinks there are some grounds for anticipating that the recent prohibitory edict will be executed more efficiently than others which have preceded it ; and Acting-Consul Harvey, at Newchwang, reports that in that province the action of the authorities in enforcing the prohibition of the growth of opium has lessened the production, and raised the price nearly to that of foreign opium.—*Times.*

GERMANY.

(FROM OUR OWN CORRESPONDENT.)

BERLIN, October 1st, 1873.

THE GERMAN "APOTHEKER VEREIN" AT COLOGNE, *September* 2, 3, and 4.

THE meeting of the German "Apotheker Verein" this year at Cologne was remarkable beyond its predecessors for the great number of important subjects discussed relating not only to pharmacy proper but also to other subjects of hygiene and public health; also for the valuable character of the scientific and practical pharmaceutical discussions which took place, and for the excellence of the display of technical apparatus which had been collected for inspection.

The chief interest was concentrated on the discussion as to the position which pharmaceutists should take in reference to the new Public Health Department of the State. It was proposed that pharmacists should voluntarily undertake to examine the drinking water of their respective districts, and for this purpose should place themselves at the disposition of the department. All the sub-associations had been occupied with this subject for months past, and the opportunity for the offer seemed to have arrived, but in the discussion weighty reasons in opposition to it were advanced. Finally the proposition of Professor Reichardt was accepted to the effect "that the chemical testing of water as required by the Public Health Department is to be regarded as an important duty of the pharmaceutists of Germany, and the General Association, therefore, calls upon all the associations of its colleagues to share in this work to the best of their ability." It is evident that especially among the pharmaceutists of the smaller towns time and opportunity would not unfrequently be wanting to carry out the investigations, often very difficult, which would be required. It was, however, thought advisable to depute two delegates to the recently-formed Association of Health at Frankfort, to watch the interests of the pharmaceutists.

The Bunzlau *Pharmaceutische Zeitung*, which has hitherto been the organ of the Association, is to be regarded as such no longer. A new organ will be established by combining the existing *Archive für Pharmacie* with a South German publication.

Another question discussed was the position of military pharmacy, to which we shall have occasion to refer in our next article, when we shall give a sketch of pharmaceutical operations in the late war, as indicated in the last number of this Journal.

Lastly, a proposition in favour of the decimal division of the pharmaceutical "Taxa" was referred to the Committee for Pharmaceutical Affairs, appointed directly by the Minister of Medicine, to which was also relegated a proposition against the admission of female assistance conceived on the old principle, "mulier taceat in ecclesia."

The second or scientific portion of the session was extremely rich in valuable papers, and discussions occurred on each of the two days of a useful character. Among them was a paper on Chloroform, including an investigation of its decompositions. In the discussion English manufacture was warmly praised, especially that from the firm of Duncan, Flockhart, and Co., of Edinburgh. Some valuable reports also on hyoscyamine and atropine, and their different reactions, followed.

The exhibition of pharmaceutical apparatus was excellent. Among the collection of chemicals and pharmaceutical products especial attention was directed to some pepsine free from colour and smell, prepared by Witte, of Rostock, of which 0·1 gramme dissolved 20 grammes of fibrin in half an hour, by the addition of 1 gramme of hydrochloric acid. This considerably surpasses the performance of some of Hottot's pepsine reported by the Vienna correspondent of this journal in August.

A trip on the Rhine to Rolandsteck, and a ramble on the "Siebengebirge," gave the members of the Association an opportunity of enjoying each other's company in a most agreeable manner.

CHLORAL HYDRATE.

A few more facts have recently been communicated in reference to chloral hydrate, which may find a place here. According to Professor Liebreich Messrs. Mendellsohn and Martin have given up the manufacture of chloral hydrate for him, which has hitherto been carried on at their works, and he announces that he has transferred it to Schering's chemical factory.

In his endeavour to produce chloral hydrate of the most perfect purity, Liebreich has made experiments which have led him to publish the following as the external features which should characterize the preparation:—The crystals should be perfect rhomboids of a glassy appearance, and sounding like glass when struck, not scaly, and perfectly dry. Chloral hydrate with these characteristics Liebreich considers preferable to that in cakes, which is no longer manufactured for him.

DISINFECTION IN BERLIN.

The Presidency of Police in Berlin has, surely somewhat *post festum*, recommended the organization of associations of citizens to carry out a thorough house to house disinfection, under the oversight in each district of the physician of the District Sanitary Commission. As the disinfecting medium the President of Police, after consultation with the Association of Berlin Pharmaceutists, has recommended a substance known as "Composition," because so many useless substances are sold for the purpose. The price of this powder has been fixed at 3½ thalers (10s.) the cask. It consists of chloride of magnesium, iron, oxide of manganese, and carbolic acid. This has been found by various experiments to be the most effectual disinfectant. The first substance absorbs the ammonia, and the last arrests and prevents fermentation and decay.

THE importance of the perfumery manufacture may be inferred from the fact that British India and Europe consume annually about 150,000 gallons of handkerchief scents alone, and that the revenue from imported perfumery in England is estimated at about £50,000, or a quarter of a million dollars.

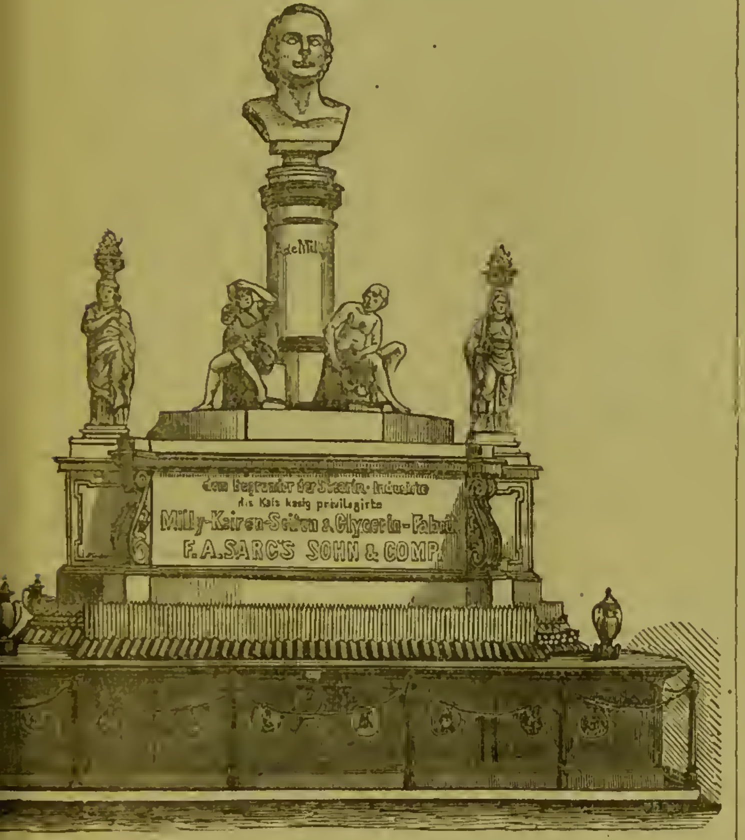
BOTANICAL NOMENCLATURE.—The Norristown *Herald* says that a man wrote to the editor of a horticultural journal, and asked: "What are the most advantageous additions to dried grasses for winter ornaments?" The editor replied: "Acrolinium roseum, A. alba, Gomphrena globsola, and G. globsola carnea." When the man read this, he fairly boiled with rage, and immediately sent a note to the editor ordering his paper to be discontinued. He said no editor who swore that way, just because he was asked a simple question, should have his support.

REMOVING BITTER TASTE OF MEDICINES.—Sugared substances in concentrated solution much diminish bitter tastes. Thus, while an infusion of gentian is excessively disagreeable, its syrup can be very well taken if it be not diluted with water, and weakening the action of the sugar. But the body that seems to enjoy this property in the highest degree is glycerhizin, or the sweet principle of liquorice. By its aid we can almost immediately dispel the bitter taste of quinine, colocynth, aloes, quassia, etc., merely chewing a morsel of liquorice-root. Aloes may thus be powdered and sifted without inconvenience. The liquorice must be kept in the mouth for a longer time in proportion as the bitterness of the substance to be overcome is intense or its solution more concentrated.—*Rev. Méd., and Med. Times and Gazette.*

NOTES FROM VIENNA.

STEARINE.

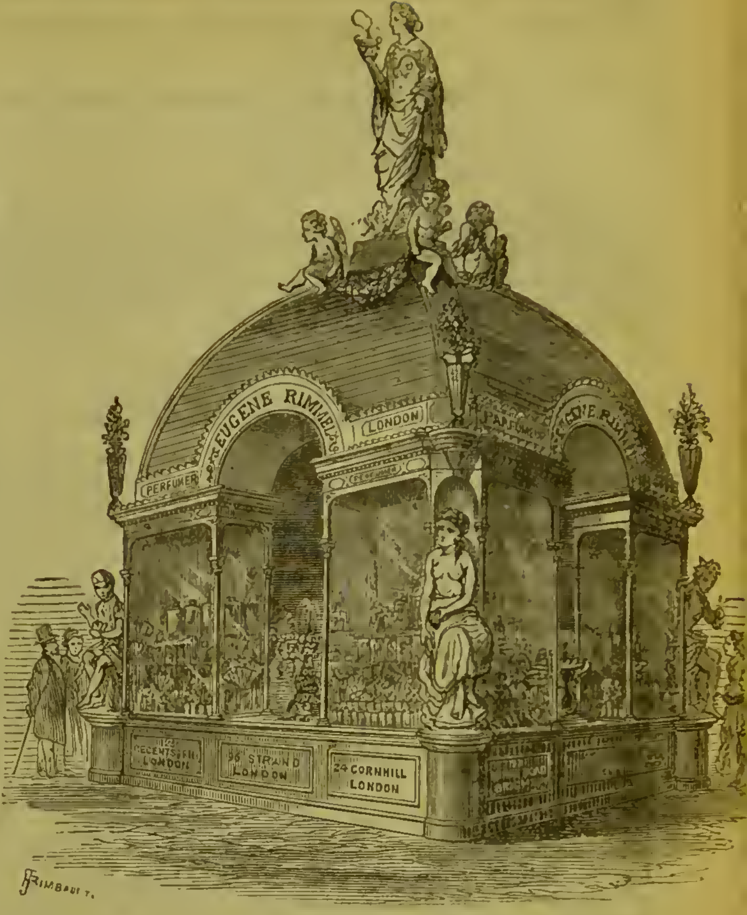
MENTION has been made several times in these pages of the very beautiful stearine monuments which several firms have exhibited in the Vienna Exhibition. One of the most imposing is that exhibited by Messrs. Sarg's, Son, and Co., of Liesing, near Vienna. Of this we have engraved a view from a photograph. The bust surmounting the pedestal is that of the founder of the industry in Austria. The vases on each corner of the base contained the beautiful crystals of glycerine, prepared by Messrs. Sargs, to which we have formerly referred. These were quite a chemical curiosity. Two Dutch firms had also some very handsome stearine trophies. These were the Royal Factory of Van Waskaarsen, Amsterdam, and the Apollo-kaarsen Factory of Schiedam. Several other Austrian firms distinguished themselves with stearine and paraffine statues, and Messrs. J. C. and J. Field, of London, contributed an admirably-executed bust of Shakespeare in ozokerit.


deMill
Dem Begründer der Stearin-Industrie
die Kais kænig privilegirte
Milly-Kerzen-Seifen & Glycerin-Fabrik
F.A.SARG'S SOHN & COMP.

PERFUMERY.

The perfumery competition may be said to have rested between England and France. The French perfumery display was all concentrated in one court, and its elegant appearance and beautiful odour made that court one of the most attractive in the Exhibition. The displays of Legrand, Rigaud, Violet, Pinaud, Meyer, and other eminent firms were exquisite.

The chief English houses were Rimmel, Piesse, the Crown Company, and Atkinson. These were scattered about the great nave, Rimmel's and Piesse's being situated in the Retunda. The former, of which we show a sketch, was known as Flora's Temple. It stood twenty-five feet high, and was twelve feet square. The allegorical statues were executed by Brucciani in a very artistic manner, and the design was well-conceived. On the summit Flora holds in one hand a bouquet, and in the other a cassolette, signifying the cause and effect of perfumes. At the corners are representations of the four seasons, and above them are vases containing the flowers special to each.



Of course the whole family of Farinas were represented, and exhibited trophies and fountains. These were the chief representatives of German perfumery.

BELGIAN BICARBONATE OF SODA.

A diploma of honour has been awarded by the chemical jury to M. Solvay, of Couillet (Belgium), for his carbonate of soda, manufactured by a special process. The principle of this process consists in the decomposition of chloride of sodium (sea-salt) in solution, by carbonate of ammonia. Decomposition occurs, muriate of ammonia remaining in solution, and bicarbonate of soda, being less soluble, being precipitated. The latter is separated, purified, and dried, and the muriate of ammonia reconverted into carbonate by decomposing with carbonate of lime, leaving a residue of solution of chloride of lime. The carbonate of ammonia of course serves for new operations with the chloride of sodium, and so on in a continuous circle.

The theory of this process has long been known to chemists, and many attempts have been made both in England and France to employ it practically. The difficulties, however, have previously seemed insurmountable. The reactions were so delicate as hardly to be relied on when carried out on a large scale, and more especially the volatile nature of the ammonia made the process appear almost impossible to impart into the arts. The merit of M. Solvay is that he has overcome these difficulties, and now produces carbonate of soda on a large scale by this scientific system. His processes are secret, but it is said that the decompositions are effected by bringing carbonic acid gas from a lime kiln into a double solution of chloride of sodium and ammonium under strong pressure, and in special vessels, thus effecting the several stages of the process almost simultaneously.

The usually adopted method of producing carbonate of soda is one or another modification of Leblanc's process, which dates from the commencement of this century. It requires first the manufacture of sulphate of soda, and the consequent employment of sulphuric, sulphurous, nitric, and hydro-chloric acids, then the decomposition of this salt in reverberatory furnaces, besides tedious processes of purification.

It is possible that when a report of the Exhibition comes to be published, we shall get more exact details of M. Salvay's important discoveries.

ALCHEMY AND ITS BEARINGS ON PHARMACY.

A Paper read before the British Pharmaceutical Conference at Bradford.

W. D. Savage.

DR. JOHNSON calls alchemy, "The more sublime and occult part of chemistry, which proposes for its object the transmutation of metals and other important operations." Shakespere in Julius Cæsar alludes to alchemy, and in King John he says :—

> "To solemnize this day, the glorious sun
> Stays in his course, and plays the *Alchymist,*
> Turning with splendour of his precious eye
> The meagre cloddy earth to glittering gold."

Our friend Dr. Attfield tells us at the time the name was given, it had little more for its object than the transmutation of the baser metals into gold. Whatever may have been the original object, there can be no doubt, in the efforts used to ascertain the combination of the metals, that the experience thus acquired, tended to promote the science of chemistry, which we are told by modern lexicographers "is the science which determines the constitution of bodies and investigates the laws which regulate the combination and mutual action of their elements." Let us then briefly consider some of the circumstances which have contributed to the building up of our present pre-eminent position. Alchemy was not always followed by its professors with the purest motives; it has been designated as "an art without art originating in falsehood, and proceeding through labour to beggary;" still we have much in the dark and mysterious gropings of the ancient philosophers to be grateful for, in aiding to develop practical chemistry. The origin of alchemy is somewhat doubtful, for whilst some contend that it was known to the priests of the Egyptians, others again with some reason affirm that it was unknown till about the 11th century, supporting their views by reference to Herodotus and Pliny, who, they say, were not likely to overlook so important a matter if it had been known to the Egyptians. It would appear that the first Greek or Roman writer that refers to the subject is Suidas (in his Lexicon occurs *Chemia,* the conversion of silver and gold); but Dr. Thompson says, that if the art of *making silver and gold* implies alchemy (or Al-chemia) the chemistry of chemistries, it originated with the Arabians when they began to turn their attention to medicine. In the book of Exodus, we are told that Moses caused the molten calf to be burnt in the fire, ground into powder, and strewed upon the water, and the Israelites made to swallow it. If this was effected by chemical agency, we are not aware of the means; it is not likely that they knew anything about the perchloride, but rather that a miracle was performed to impress the astonished multitude. We must, however, pass over much that is interesting and come to consider *alchemy* as illustrated by the erratic Paracelsus, a native of Zurich and born in 1493. His father was a physician and instructed him in *alchemy, astrology* and medicine. With a large amount of knowledge and experience he combined an inordinate amount of self-esteem. He is said to be the first who ever held a professorship of chemistry in Europe, having been elected in 1527 to the Professor's chair at Basil; but he was so conceited that he burnt with great solemnity the writings of Galen and Avicenna, because they did not agree with his views—and it was no wonder that they did not—when he publicly declared that if God would not impart the secrets of physic, it was not only allowable, but even justifiable to consult the devil. He was a dissipated, wandering empiric who professed to have a panacea which was capable of curing all diseases in an instant, and even of prolonging life to an indefinite length! Alas! for the fallibility of human nature, a few hours' illness terminated his life, when but forty-eight years old, at Salzburg, in Bavaria. Chemistry does not seem to owe so much to him as to the influence which he had on others, he did not scruple to denounce the schools and systems of others, whilst he had no well-arranged plan of his own. We are told that he adopted the *three elements* of Basil Valentine, of *salt, sulphur,* and *mercury;* with respect to mercury he was the first to administer it internally, and gained some celebrity by curing syphilis with it. About the same time (1540), a physician of Paris (Antoine Lecoque) acquired considerable reputation by curing the same complaint by the administration of gold, but in what form is not mentioned; it is curious to observe the union which existed betwixt the early chemist and the physician, and how often this combination forwarded the usefulness of both. However, this connection has not always been productive of good, for the early chemist was too much disposed to attribute the source of all disease to the presence of some hostile acid or alkali, or some deranged condition in the chemical composition of the fluid or solid parts, so they conceived all remedies must act by producing chemical changes in the body; on this hypothesis a fever which raged at Leyden in 1699 was treated by absorbents and testaceous medicines to counteract the pernicious influence, as they thought, of some prevailing acid. The consequences proved most serious, as two-thirds of the population of the city found an untimely grave.

The Arabs seem to have been the great promoters of the school of polypharmacy. The "*Summa Perfectionis*" of Geber, in the 8th century, the earliest work on chemistry, is said to be such a strange production that Dr. Johnson believes the word "gibberish," to be derived from the name of the author. These gropings in the dark, however, to discover the means of attaining perpetual youth and boundless wealth by the philosopher's stone, have not been unattended with advantage to science, although it seems a mystery, viewed in the light of modern knowledge, how two such impossible results could be imagined. The assimilation of gold by the precipitate from mercury, or as it was termed the "*mercurius precipitatus per se,*" was sufficient to impose on the credulous. This I say, after all, is not so wonderful, but the *perpetual youth* anticipated from the discovery is not so easily explained, unless indeed, the wealth being all powerful was used metaphorically to imply freedom from care and as a sequence longevity. Alchemists believed the metals were composed of sulphur and mercury, the differences in their properties resulting from the differences of the degrees of combination. Gold for instance, was made of pure mercury, united with a small quantity of sulphur, also very pure copper was formed of mercury and sulphur of almost equal proportions and so on, but the sulphur and mercury mentioned by the alchemists as performing such an important part in metallic combinations were not always the common articles known by these names now. The *mercurius* represents the metallic element cause of ductility and brightness of metals, whilst *sulphur* represents the combustible element then known as 'Phlogiston.' The problem therefore was so to alter the proportion of the elements by careful manipulation as to effect the respective changes; and as the mass of the people knew nothing of the simplest results of chemical combination, they were easily imposed on. An instance of this kind is related of one Bragadino (alias Count Mamugnaro), who assured his dupes that by travelling much in the East, he had become initiated into the secrets of alchemy. His public exhibitions *seemed* to justify his pretensions, and when his patrons failed to produce the same results, it was their bungling; for had he not *publicly* shown them *what* could be done? His secret was simply the employment of an amalgam of mercury and gold. His acquisition of wealth gave him a position, which proved his downfall, for in 1590, he exhibited before the Court of Munich, when his cheat was detected and he was hung: previous to this he had gone about Germany with two immense black dogs, proclaiming that Satan himself was subservient to his power. Another class of empirics may be mentioned, those who secreted gold dust in charcoal and disguised it by amalgamation with silver and other metals. Some few years ago we had analogous cases of imposition practised in London and many of the large towns, by pretending to extract payable quantities of gin from bread. In Brighton, a large concern was started, expensive machinery erected, and the products of distillation carefully stored; but the yield of spirit was so little that it would not pay. It was generally believed that the experiments showing favourable results were effected by the fuel being first impregnated *with spirit.* Scientific roguery was not confined to our ancestors; every day reveals some new scheme of modern alchemy requiring neither the exhibition of the crucibles with false bottoms nor *golden coloured* metals to obtain dupes.

But recurring back to our history, Roger Bacon claims a prominent place as a philosophical alchemist. He was a native of Somerset; born in the year 1214, he became a Cordelier friar, and pursued his studies as privately as possible; notwithstanding he was accused of magic and suffered ten years' imprisonment. He is said to have written nine works on chemistry and alchemy, but the only printed one, Dr. Jebb states, was the "Speculum Alchemiæ." It is said that he invented gunpowder; this has been doubted; at any rate his description of thunder and lightning produced from a mixture of sulphur, nitre, and charcoal, would lead one to believe that its composition was known to him and to a certain extent its effects, but he very judiciously says, "you must know the method of mixing them!"

The next name suggested in the order of succession is Raymond Lully, a friend and scholar of Bacon, born in Majorica, 1235: he it was who introduced those hieroglyphical figures or symbols, which so strangely and in most cases so inappropriately used to ornament the globes in our shop windows. Tully (according to Gmelin) was acquainted with carbonate of potash, for we are told he *distilled* cream of tartar, burnt the residue and obtained a deliquescent salt. He was acquainted with nitric acid, which he produced from saltpetre and green vitriol. He mentions its power of dissolving mercury and other metals; his aqua regia was made by adding sal ammoniac, or common salt, to nitric acid, and he was aware of its power to dissolve gold. Spirits of wine was known to him as aquæ vitæ ardens, and he knew how to make it stronger by using dry carbonate of potash, and that he could prepare vegetable tinctures from it. He also mentions alum from rocca, marcasite (bismuth), white and red precipitate of mercury. He first obtained oil of rosemary from the plant by distillation. He made a lute with flour mixed with white of egg and spread on linen, and although the writings of Raymond Tully are mixed up with a good deal of jargon, yet in considering the progress of chemistry five centuries ago much merit is due to the efforts of this wonderful man.

Arnoldus de Villa Nova, a native of a village of Provence, is said to be the author of a work entitled "Rosarium," intended as a complete work of alchemy of the time. Like most of those who preceded him he considered *mercury* was the constituent of metals; he professed a knowledge of the philosopher's stone, gold and gold water were in his opinion the most precious of medicines. He employed mercury in medicine, and prepared a mixture of oil of turpentine, oil of rosemary and spirit, which afterwards became famous as "Hungary Water"; his distillations were made in glazed earthern vessels with a glass top and helm.

In the middle ages alchemy became a favourite pursuit in many European countries. Edward I. and III. were believers in it, indeed, in the reign of the last-named monarch a proclamation was issued (1329) for the apprehension of two famous men who knew how to make silver by the art of alchemy, and who "May be profitable to us and our kingdom."

Basil Valentine, a Benedictine monk of Erford in Saxony, born in 1394, was a distinguished alchemist, and the first to suggest the method of preparing antimony, and his experiments with it on his brother monks resulted in his killing several and injuring others. The Everlasting Pill of the ancients consisted of *metallic* antimony, which Dr. Paris says being slightly soluble in the gastric juice, was supposed to exert the property of purging as often as it was swallowed. Strange theory!—just imagine *one* pill for the repeated use of a whole family for their lives. Can modern homœopathy boast of anything equal to this?

Valentine has the credit of discovering the volatile alkali and its preparation from sal ammoniac. He used the mineral acids as solvents, and noticed the production of æther from alcohol; he is said to have given iron as a tonic, and a fixed alkali made from vine twigs cut in the beginning of March for the cure of gout and gravel; he thought the metals were compounds of *salt, sulphur,* and *mercury,* and that the philosopher's stone was composed of the same ingredients; that a great similarity existed in the mode of purifying gold and curing the diseases of men, and that antimony answers best for both; he was acquainted with arsenic, knew many of its properties, and mentions a red compound which it forms with sulphur. Zinc and bismuth were known to him, and he was aware that manganese was employed to render glass colourless. Many of the preparations of mercury, such as the nitrate, bichloride, and red oxide were known to him; he was also acquainted with acetate of lead as saccharum saturni.

A subject of such vast importance, extending as it does over centuries, cannot possibly be compressed in the small space allotted to me; I must therefore content myself with a summary, applying in the best way I can its bearings on pharmacy, although its natural affinity is chemistry. In taking a retrospective view of Paracelsus and his doings, we cannot help observing a large amount of mysticism and error mixed with truth; for instance, he says, the fundamental force of a thing is a *star,* and defines alchemy as the art of drawing out the *stars* of metals. According to Dr. Thompson he had two *laudanums*—one was red oxide of mercury, and the other consisted of 1 oz. chloride of antimony, 1 oz. hepatic aloes, ½ oz. rose water, 3 oz. saffron, and ʒij. ambergris, mixed together; and in one case it is related that three drops effected a cure, and in another three pills killed the patient—what menstruum was used to make either of the above into drops we are left in ignorance. His elixir of life was said to be a solution of common salt. He had a strange conception that a power which he calls *Archæus* (nature) presided over the chemical operations of the stomach, separating poisons from nutritive food, that *tartar* is the principle of all the maladies proceeding from a thickening of the humours, the rigidity of the solids, or the accumulation of earthy matter, so that medical men are enjoined to discover the *tartar* before they try to explain the affections; as *tartar* is deposited at the bottom of the wine cask, so in the living body is it deposited on the teeth. When we employ vegetable substances for the cure of diseases we are to consider their harmony with the constellations; the doctrine of signatures, as it was called, supplied another means of knowing how far the nature of the disease was indicated by colour of the remedy—thus saffron and turmeric were good for jaundice, and in the animal kingdom, the lizard is said to have the colour of malignant ulcers and carbuncles, and therefore a suitable remedy. Polygonum persicaria (dead or spotted arsmart) was an infallible remedy against all the effects of magic. However, with all his strange conceptions, Paracelsus was a great reformer, and representing chemistry as he did an indispensable art in the preparation of medicines, he effected great good by getting rid of the objectionable and in many cases disgusting decoctions and syrups by substituting *tinctures, essences,* and *extracts*; and it is said that he was the first to introduce *tin* as a remedy for worms. Mercury, arsenic, zinc, and bismuth, were known and used by him; and as sulphate of potash is called by Oswald Crollins, of Hesse, *specificum purgans paracelsi,* we may infer that he was in the habit of using it. Crollins, added some valuable remedies. The binoxide of mercury he calls *Arcanium corallinum,* the chloride of silver was *Lima corneæ,* and calomel he called *Mercurius dulcis.*

Passing over many names more or less important in the history of alchemy, we must not omit, however, altogether John Baptist Van Helmont, a physician and chemist of Brussels, who was distinguished by alternately adopting and rejecting the art of magic as practised by the Jesuits; the doctrine of the Stoics, the sacred books of mysticism, etc. An accident, we are told, induced him to devote his attention to the practice of medicine and its reformation. Happening to take up the glove of a young lady who was suffering from the disease, he caught the *itch*; and the Galenists, whom he consulted, according to their usual practice, assigned the cause as combustion of bile and the saline state of the phlegm; and after reducing him to great weakness by a course of purgatives, without effecting a cure, he determined to study medicine for himself, and he took the degree of M.D. (1599), travelled through France and Italy, and, we are told, performed many cures by the way. It is foreign to our purpose to follow him in all his curious proceedings. He tells us the *Archæus* of Paracelsus draws all the corpuscles of matter to the aid of fermentation, that *water* is the true principle of everything which exists, and he illustrates this by drying 200 lbs. of earth and planting in it a willow weighing 5 lbs. The earth and plant was kept moist with rain-water, and at the end of five years, notwithstanding the earthern pot in which the willow was planted was covered with a perforated tin plate to keep out the decayed leaves of autumn, the willow weighed 169 lbs. 3 oz.; the earth having been again dried was found to have lost but 2 oz. of its original weight, so that 164 lbs. of wood, bark, and root were produced from water alone (air ?); but we must pass over much that is interesting, and briefly refer to some of the things more immediately connected with ourselves. Van Helmont knew the properties of carbonic acid gas under the name of *Gas sylvestre;* sal ammoniac, he says, may be distilled alone, and so may aqua fortis, but if mixed together, so much *Gas sylvestre* escapes as to burst the vessels, unless it has a means of escape. He was evidently aware of the evolution of gas in mixing the solution of carbonates and metals in acid, but he was unable, as we are, to collect and distinguish the kind of gas. It is said that he swallowed some henbane, that in two hours he had the most disagreeable sensation in his stomach, and having no longer the free use of his mental faculties, he believed the seat of the understanding to be in the stomach, of volition in the heart, and of memory in the brain. He seems to have known the gastric juice, which he calls an acid liquor for dissolving the food, but under the mysterious influence of the *Archæus.* The *tartar* so vaguely described by Paracelsus is much more clearly defined by Van Helmont, who says it is a crystallized salt, but he retains his belief in the mythical *Archæus*, when he says mercurials, antimonials, opium, and wine are agreeable to it in a state of delirium from fever. His *mercurius diaphoreticus* is supposed to have been calomel; his *golden sulphur* would appear to be sulphuretted antimony, and his *antimonium diaphoreticum* seems analogous to our P. antimonialis, but not so pure. Opium he used as a *fortifying* and *calming* medicine; whatever that may mean (seeing that he considered it to contain an acid salt and a bitter oil) may be guessed rather than defined.

I might enumerate many other distinguished names who have contributed more or less to the alchemist's creed, but enough has been said to connect the ancient professor of alchemy with the modern chemist, and the efforts of both to promote pharmacy; and whatever may have been the motives of those who early practised the art, much valuable information has been elicited. We may smile at their processes; perhaps our successors may smile at our *allotropic* and *molecular* theories. One thing is quite certain that we are not behind the alchemists in our efforts to *procure gold*; indeed, we go far beyond them, for we try to convert not simply the inferior metals, but *everything* into gold. We may wonder at men being foolish enough *to pay* for a knowledge of a secret, which did the owners possess would render future efforts unnecessary. Are we much wiser in this age of enlightenment? Does not the promised 50 per cent. of the underground, never-ending, calling up capital of the Boro' Mining Company suggest something like it? but I will conclude with one of Æsop's fables: A certain man bequeathed to his sons a treasure, which was buried in his vineyard; they dug and dug, but no treasure could they find. There was, however, a treasure in store, for the future crops revealed the wisdom of their father; and it is just this that the alchemists did for us.

THE PRODUCTION OF OPIUM.

THE varied collection of opiums shown at the Vienna Exhibition furnishes a good opportunity for a cursory review of the producing districts of this drug, which is almost solely used medicinally in Europe, while in the Eastern and Mahometan countries, and especially by the Mogul and Malayan races—that is, by at least 700 millions of souls—this narcotic passes into ordinary and extensive consumption.

Commencing, then, with the Turkish Empire, which by its possessions in Asia Minor is with Persia the most ancient seat of production. There almost every small proprietor cultivates the poppy on his land. Some days before the falling of flowers, the capsules or heads of the poppy are scored horizontally with a knife, and that the wall may not be broken, the whole length of the incision is bound round with thread.

The white juice which flows from this cut congeals rapidly in the air, and assumes a brownish hue. The next day it is removed and laid on poppy-leaves, and when a sufficient quantity has been obtained (a poppy-head scarcely yields the third of a grain), it is made up into little cakes or rolls, wrapped in poppy-leaves, and forwarded to market for sale. From 1830 to 1850 the sale of opium was monopolized by the Government, and there were at Smyrna and Constantinople depôts where all produced had to be brought and delivered at a fixed price. Since the suppression of this Government privilege all, or nearly all, the opium produced in Turkey enters into commerce by the way of Smyrna, and passes under the name of Smyrna opium. The average annual export is about 400,000 lbs., of which three-fourths goes to Europe and the remainder to North America, where, in the last thirty years, the consumption of opium has nearly quintupled; and to Eastern Asia, especially China, where Turkish opium is sold under the name of kin-ni (golden dirt). The production is very variable, as the poppy harvest is uncertain. Hence the oscillations in this Turkish drug, which, during the last six years, has doubled in price. The cause of this arises no doubt from the increased demand and extended use, as well as the changes of transit routes. The opium of Smyrna is the purest of all which enters into commerce. The best kinds contain from 12 to 15 per cent. of morphia, and hence it is most esteemed in European pharmacy. The opium most valued is that of Boghadytsch and Balikesri, after which come those of Kyrkagatsch, Kjutahie, etc. There are shown in the Exhibition ninety-seven specimens of opium. From authentic analyses, the opium of Halab-Hipar contains 12·55 per cent. of morphia, and that of Sinope 12·85 per cent. Persia, which is probably the parent country of the poppy, as well as that of opium, obtains this product from its central provinces, and sends it to Turkey, as well as to the southern and eastern parts of Asia. That of Disful and of Schuschter is renowned, and that obtained at Yezd and in the Province of Mazanderan on the Caspian Sea is equally esteemed. The Persian opium rarely appears in commerce in the form of cakes, but usually in cylindrical rolls wrapped in paper. The Russian opium of Derbend (Transcaucasia) is also met with in the same form. This kind is but slightly narcotic, has a very bitter flavour, is of a yellowish brown colour, and of the consistence of an electuary, owing no doubt to the admixture of a large quantity of honey.

In British India opium is produced in large quantities, principally in the districts of Malwa, Patna, and Benares. In Malwa the extraction is limited, and in Bengal it is a Government monopoly. The whole is delivered to the State factories, and a special opium agency supervises the cultivation, production, delivery, and transport of this drug. The extraction and preparation of opium in India is different to that pursued in Asia Minor, and the product obtained, judging by the morphia it contains (the true criterion of value) is very mediocre, yielding only from 5 to 9 per cent. In India they pierce the capsules vertically with a special kind of knife with several blades; the juice which flows out is collected in a kind of spoon and deposited in earthen vessels, where it separates into a solid mass (the opium proper) and a liquid part of a dark brown.

In the factories the opium is made up into round balls, weighing four or five pounds, which, after becoming dry, are placed in special cases, each holding forty balls, and shipped to China. The Celestial Empire is almost the sole market for opium so prepared. At first the Chinese only used opium as a medicinal agent, but later it came to be a object of general consumption. At the commencement of the last century there were only very small quantities of this drug received in China, probably through the agency of the Portuguese, and the quantity never exceeded 30,000 lbs. But towards the close of the century the use of opium had spread over the surface of the empire, and penetrated among all classes, in spite of stringent measures levelled against its introduction.

The production in India was largely extended, and the importation into China reached unheard of proportions. At the time of the opium war, or at least a few years after, the importation amounted only to 4,000,000 lbs.; in 1867 it had reached 10,000,000 lbs.; and in 1869, the value of the opium imported into China was £10,500,000 sterling. Now this article takes the chief place in the imports into China, and the monopoly of opium brings into the Indian Government a gross sum of £8,000,000 sterling per annum.

However, the official statistics of the opium exports from

India in the ten years ending 1870, shows that there was no augmentation on the previous decennial period, but, on the contrary, the shipments are about stationary.

The consumption of opium in China has, however, by no means diminished, on the contrary, the conclusion must be arrived at that the Chinese supplement their supply by other means. The consumption is estimated at over 15,000,000 lbs. per annum. Despite the edicts of the Chinese Government the local cultivation of the poppy is always extending, especially in the southern provinces of Yun-nan, Setschuan, Hounan, and Tche-kiang, where it forms the principal winter crop.

The poppy appears to have been long cultivated in many provinces of China (in 1736 it was grown in a part of Yunnan), having been apparently introduced from India. Two, and often three, crops are obtained in the year by alternating the poppy with alimentary plants. It has not been without a strong opposition on the part of the Government that the culture of the poppy has been thus extended. Notwithstanding the severe edict of the 28th April, 1865, and confirmed by those of the 21st January, 1869, and December, 1872, this plant continues to replace rice and the cereals. If, however, we may believe a high mandarin, the Government only tolerates the indigenous production, with the view of stopping the Indian importation, and if this were accomplished they could readily arrest the local culture.

For smoking, a preparation of opium is used, *min-yang*, of which there exist many qualities, from the finest to the mere residue of the pipes (tie-chau-tao), which is used by servants and the poor. The indigenous opium of China, which appears to be often adulterated with foreign substances, such as the glutinous juice of *Cassia fistula*, is rich in morphia, 6·94 per cent. according to Dr. Jamieson, and in narcotine 8·87 per cent. But it is not so much sought after by smokers as the foreign. Of late years, the lower price at which it is sold—less than half—has caused it to interfere materially with the sale of Indian opium.

For Europe, Indian opium has not that importance, seeing that the Chinese pay dearer for it than the best Turkish opium is sold for here, and looking at its smaller percentage of morphia, it could not be employed medicinally.

Turkey in Asia and British India, it is thus seen, are the two grand producers of the opiums of commerce. That which is obtained in other countries is scarcely worth speaking of, although efforts are making to cultivate the poppy in various countries.

Egypt was formerly cited as an opium producing country, and the produce of the environs of ancient Thebes was much in vogue, but it lost its reputation in the European market by arriving adulterated. Endeavours are being made to revive the culture and commerce. At Esneh, Assiut, and Akhmin an opium is obtained which contains respectively 3, 8, 8½, and 10 per cent. of morphia.

In Algeria there is a good future prospect for the production of opium, which is found to contain a larger proportion of morphia and less of codeine and narceine than that produced in the centre and north of France. According to calculations made by colonists in the Province of Oran, who have carried on this culture for some years, the mean return from a hectare of land (about two acres) is as follows :—

		Francs.
20 kilog. of opium at 30 francs	..	600
10 hectolitres of poppyseed at 20 francs		200
		800

This return, however, barely repays the cost, for the collection of the opium is troublesome and expensive, and the plant requires a good deal of manure, being considered in India as a very exhausting crop.

In Victoria the culture of the poppy seems to have a chance of success, the opium contains from 3 to 7 per cent. of morphia. In North America, especially in the States of Vermont, Illinois, and Virginia, endeavours have been made to develop the culture of the poppy for the extraction of opium, but up to the present time the reports as to the results are contradictory, and on the whole unfavourable.

Finally, we come to the European States. Various efforts have been made to produce opium in France, Germany, Austria, Greece, Italy, Switzerland, and Sweden. The most serious and extended efforts were those of France, where M. Aubergier, of Clermont, obtained a fair quantity of opium; and M. B. Roux, at Rochefort. When it is borne in mind that France obtains annually from the poppies, cultivated for their seed only, oil exceeding in value £1,250,000, it is hoped also to add to this some quantity of indigenous opium.

In Germany, opium has been obtained, especially in Wurtemberg and Silesia, which yielded 12·15 per cent. of morphia.

These different trials have satisfactorily proved one fact, that Europe is able to furnish an opium equally rich in morphia as the best product coming from Turkey. And if this question so often mooted has not yet attained a satisfactory result commercially, the fault lies chiefly in the greater expense of land and labour which the Eastern nations can furnish so much cheaper.

The subject of opium having occupied so much preliminary space, the consideration of other medicinal plants and pharmaceutical products shown must be held over for another article.

P. L. S.

CINCHONA CULTIVATION IN INDIA.

UPON the plains of India are grown cotton, sugarcane, indigo, jute, opium, and cereals, and in the mountainous parts coffee, tea, and cinchona. Many hundreds of acres have been cleared in these hill districts, where rows of coffee and tea plants have taken the place of tall forest trees and tangled undergrowth. Whilst in Southern India the coffee cultivation has increased in a remarkable manner, the tea plant has clustered in larger numbers around the Himalayas on the north, the cinchona, which was introduced from South America about twenty years ago, has now passed through all the difficulties of its early stage. Unlike tea and coffee, this plant had never before been cultivated. It was brought direct from the wild forests where, in a constant struggle for existence with other trees, it grew under many disadvantages, and its habits had to be learned by experiment. For the support of European life in hot climates it is an absolute necessity, and for the natives it is scarcely less an essential, since fever is by far the most prolific cause of death in India, carrying off, save in exceptional years when cholera is raging, very many more than all the other diseases put together. It is known that, exclusive of Bengal, the North-West Provinces, and Burmah, 900,000 persons were carried off in 1871 by fever, so that the total number in all India cannot be far short of a million and a half. At least half these lives might be saved if quinine could be retailed at every druggist's shop at one rupee an ounce. It is the only real remedy, and the people put faith in it, and are ready and anxious to take it. The vast importance of the cinchona plant cannot therefore be overestimated, and we are glad to learn that there is every prospect of the febrifuge alkaloids being manufactured at the plantations at a cheap rate, and thus becoming accessible to the people.

It is not surprising that the cultivation of the cinchona should be regarded as a permanent duty of the Government, and, however costly, it would be an expenditure that must be incurred. The whole of the sums, however, expended since the commencement have scarcely exceeded £60,000 and it is gratifying to know that besides the incalculable benefits conferred, as a commercial speculation the outlay will soon be highly remunerative. Besides the use made of the bark in India itself, the value of which is already considerable, upwards of £2,500 will be annually realized from sales in the London market of the Nilgiri bark alone, to which the Darjeeling and other sales must be added. There are now 2,639,285 plants in the Government plantations on the Nilgiri Hills, without counting those of private planters. The largest trees are 30¼ feet high, and over three feet in girth round the trunk. The area covered by the plantations amounts to 950 acres, and the bark under cultivation is much richer in quinine, and the other febrifuge alkaloids, than the wild bark of South America. During last year, 7,295 lbs. of excellent bark were sold in the London market, realizing prices from 2s. 3d. to 2s. 10d. per pound; and 65,688 lbs. were supplied to the local manufactory, making a total value of £6,500. This year 20,000 lbs. will be sent from India for sale. There are 591,600 growing trees of red bark in the plantations, and if an eighth of these be cut down every year, bark will be annually available, yielding 10,323 lbs. of febrifuge alkaloids. At Longmulla, on the Mahâbaleswar Hills, in the Bombay Presidency, a cinchona plantation was formed in 1864; in 1872 there were 7,460 plants, but these have been injured by want of sufficient water and heavy gales of wind. There are also 20,000 plants in the nursery ready for planting out. At Rungbi, near Darjeeling, 2,000 acres are under cultivation. The bark has been sold in the London market at prices ranging to 1s. 3d. per lb.; and enormous quantities have been stored for local manufacture. A chemist has been appointed to reside at the plantations, with the view to an efficient febrifuge being manufactured at so cheap a rate as to be within the means of the natives of Bengal, who will thus participate in the benefits which their brethren in Madras are already enjoying. In the Sittang division of British Burmah, cinchona plantations have been formed at two places, about 3,700 feet above the sea; the main plantation now contains 354 plants, fairly established. Cinchona plantations have also been formed in Curg, and in the Bababaden Hills in Mysore, and the tree is grown with success in Wynaad, in the Palmai Hills, in Tinnivelly, and in Travancore. The prospects therefore of its diffusion over India seem in every respect favourable, and Mr. Broughton, the quinologist attached to the Government establishment, is enabled to manufacture the alkaloid in an exceedingly cheap form, which is supplied to the medical stores. Hundreds of fever patients are thus annually cured. The grand object of this beneficent measure will therefore be obtained by the provision of an abundant supply of the febrifuge at so cheap a rate as to be within the means of the entire population.

Provincial Reports.

LIVERPOOL.

(FROM OUR SPECIAL CORRESPONDENT.)

Liverpool, Oct. 10, 1873.

Science has been prominently brought before the public here lately, if visits and addresses from leading men, and the opening of the session of the learned societies, are to be any criterion. Professor Williamson, F.R.S., President of the British Association, delivered an address and distributed the prizes to the pupils of the Liverpool School of Science, on the 26th ult. A new School of Medicine, in connection with the Royal Infirmary, was opened on the 1st inst., and an introductory address was given by Dr. R. Caton, lecturer on physiology, after which the prizes to the pupils of the old institution were delivered. Dr. Gladstone, F.R.S., delivered the inaugural address to the Liverpool Operatives' Science Classes, and distributed the prizes gained during the past session. This association is about to erect a public laboratory at a cost of £500, by public subscription, for the use of the working classes to study chemistry. The Liverpool Science Lecture Association, formed to provide a course of lectures by original investigators, with a guarantee fund of upwards of £1000, held its first lecture by Professor Odling, F.R.S., &c., on the 8th inst. There was a full audience. Five other lectures follow; the cost of these will be upwards of £400, and it is hoped they will be proved more than self-supporting.

At the annual meeting of the Chemists' Association, the business was merely formal, excepting that the members had the pleasure of welcoming Dr. Edwards, an old friend, in their midst; but at the first general meeting of the new session, held last evening, there was a large attendance, it having got abroad that the president, Dr. Symes, was not quite satisfied with the position of the association, and wished to throw up one evening a month for the sole use of students in pharmacy and assistants, under the presidency of the Association, but the senior members and masters not to be invited. Dr. Symes' address augurs well for a prosperous session, but it called forth a very animated discussion. The old members of the association admitting that affairs were quite open to improvement, still thought the despondency with which the president had received them was not fully called for.

Mr. Shaw warmly defended the action of the Pharmaceutical Council, but did not get much sympathy from the president and some other members present. After ten o'clock, Mr. Hallawell rose to move an adjournment, as many others wished to speak on the question.

I hear we are have an establishment *au Muter* here. At present some students are under training, and their success at the examination will be reported in the manifesto to be issued about Christmas. We want such an establishment here to help students to prepare themselves for the examinations, without the extra expense of living in London, and without also having to sacrifice some portion of their income by being wholly without a situation during the period of their studies.

LIVERPOOL CHEMISTS' ASSOCIATION.

The annual meeting (24th Session) was held September 25th, the President, Mr. E. Davies, F.C.S., in the chair. The business of the meeting was of a formal character. The Report of the Council was read and adopted. It showed a slight increase in the number of members, but was devoid of any special interest. The Treasurer's financial statement showed a balance in hand.

The retiring members of Council were Dr. Symes, Messrs. Davies, Murphy, and Sharp. Dr. Symes, Messrs. Davies and Sharp were re-elected, and Mr. James T. Armstrong took the place of Mr. Murphy.

After the usual votes of thanks to the authors of papers, the donors to the library and museum, and the officers during the past session, Messrs. Davies, Shaw, and Sumner welcomed to the meeting one of the honorary members, Dr. Edwards, of Montreal, alluding to the services he had rendered to the Association in days gone by.

Dr. Edwards thanked the members for the cordial reception they had given him. He enlarged upon the value of such associations, and, alluding to the British Pharmaceutical Conference, he considered that it had eclipsed the British Association. He laid great stress upon the five months' lecture system, saying it would not be good for the professor or the student. He did not wish to speak of Canadian pharmacy—the crowding of learning after business hours was no good—he had not any faith in evening classes only.

The President announced that the course of lectures in connection with the School of Pharmacy would commence Thursday, October 9, 1873, and be continued on successive Thursdays until the end of March, 1874, at the Royal Institution Laboratory. Arrangements will be made for holding classes in Materia Medica and Botany during the spring and summer months.

The first general meeting (25th Session) was held October 9, 1873, the President, Dr. Symes, in the chair. The Hon. Secretary announced the election of officers for the ensuing session—President, Dr. Symes; Vice-President, Mr. Alfred H. Mason, F.C.S.; Treasurer, Mr. John Shaw; Honorary Secretary, Mr. James T. Armstrong; Council, Messrs. Davies, Abraham, Jones, Hallawell, Redford, Sharp, Sumner, and Tanner.

Dr. Cook, Messrs. Mumford, John Alexander, and George P. Halliburton were unanimously elected members of the Association.

Mr. E. Davies, F.C.S., exhibited and explained an interesting series of gas-burning apparatus contrived by Mr. J. Wallace, applied to heating purposes, the foundation idea in the whole of which is an improved form of Bunsen burner. This burner consists essentially of a brass tube throwing a jet of gas into a hemispherical chamber, into which air is drawn as well as gas by the expedient of leaving an opening or break of continuity in the gas tube, ensheathed only by a covering of permeable safety-lamp wire gauze, just before it enters into the hemispherical chamber. Upon the well-known principle that jets of fluid, escaping under pressure from an orifice travel on in the original direction of motion a certain distance before they begin to disperse, the gas leaps across the open chasm and enters the hemispherical chamber, dragging in with it a current of air through the wire gauze sheath. The air and gas mix in the chamber and then rise through a transverse internal diaphragm of wire gauze to issue from a burner at the top. The flame produced under this arrangement is an emerald amber-tipped cone of very remarkable heating power. It gives a temperature of 3000° Fahrenheit, and readily melts brass, silver, gold, and copper. The burner is made with 1, 4, 12, 16, or 24 flames, according to the uses to which it is to be applied.

Some discussion took place, in which the President, Professor Murphy, Dr. Cook, and others took part.

The President then read the following

ADDRESS.

It has pleased your Council to appoint me a position in your midst, which I have with some reluctance accepted, and that for the following reasons:—First, my personal inability to fill the office in the very perfect manner in which it has been done by our late President, the amount of ability which he has displayed, the happy combination of firmness in holding to points he felt to be right, and the kind and courteous manner to those who differed from him in opinion, has engendered a good feeling towards him from all, and an indebtedness which it will be difficult to repay.

Secondly. My business being situate somewhat distant from our sphere of operations, and requiring much personal attention, there will be a difficulty in placing so large an amount of time at your disposal as has been done by Mr. Davies, who was always on the spot to lend a willing ear or offer his good advice.

Thirdly, gentlemen (and this is by far the most painful reason), it is known to you all, we whisper it to each other, and yet we scarcely have the courage to acknowledge it at our meetings—it is that *this Association is far from being in a flourishing condition.* I say it is an accepted fact. Individually we admit it. We are asked, and we ask, why it is so, but as yet I have not received any satisfactory explanation.

Now, taking the reins of an Association like this, under such circumstances, involves a responsibility for which I feel myself quite unequal. If a President possessing qualities so admirably adapted to promote its welfare, working in conjunction with a Secretary whose untiring perseverance we must all admire, has accomplished so little, what can you expect me to do? It seems to me there are just three things we can do—choose you which you will have—we can at once come to a standstill, we can allow the thing to drag on to a slow but certain death, or we can probe deeply into the wounds, apply our remedies, and rise healed, invigorated, renewed. The latter is the only course which commends itself to my mind, and appears worthy our adoption. Let us, then, honestly and earnestly set to work to ascertain what impedes our progress, and, if possible, to remove the same. Depend on it, we are in some way or other acting contrary to the laws of natural development.

This Association was formed in accordance with a natural want amongst the chemists and druggists of this town of a means of fraternising amongst themselves, and of providing educational facilities for the rising generation of pharmacists.

If we have erred—to err is human, and we are only such!—is it not far nobler to acknowledge our mistakes, and reform them, than to go on upholding and propagating error and its ill consequences? Is it not possible we have thought too much of the dignity of our antiquity? may we not have rested too much on the satisfaction that this is the oldest of the provincial associations, forgetting that the external world of pharmacy judge of us not so much by our age as our usefulness? I cannot by any means approve of a modern go-a-headism, which ignores all benefit derived from the past, neither can I sympathize with that veneration of the past which impedes the progress of the present or future. As far as I can gather, we work this day under the same laws and in the same groove as when the Association was established some twenty years ago, only more feebly. These laws appear in the main very judicious, and yet they must possess a wonderful power of adaptation, if they are thoroughly suited to the requirements of pharmacy in the present day.

This generation, which accomplishes so much of its work, not by the direct rays of the sun, but by the development of latent light stored up through vast ages in our coal beds, would scarcely thrive under the curfew. What would become of our correspondence under the old postal system? Nay, what is it that finds employment to our members of Parliament but making new laws, or remodelling and adapting old ones to the requirements of the age. Let us, then, be moved by this spirit of progress, and endeavour to keep pace with the times. Relying on the active co-operation of our Council and Secretary, together with that of the members of the Association, I hope we may make the legend of the Phœnix a reality in our case, that we may put forth new energies, and again live in earnest.

I should, indeed, be sorry to see the Association mixed up with trade disputes, or working for the interests of any one party; but we might go too far in ignoring the legitimate claims of trade. Science would fare but badly at our hands if our business is not well cared for. Our daily wants are a stern reality, and it is but a poor philosophy that does not teach a man first to provide these. The Pharmaceutical Society is a kind of Pharmaceutical Parliament, and there are many trade questions which it would be impolitic for such a body to take cognizance of. If we were just the Liverpool *branch* of that Society, our sphere of operations in this direction would be equally circumscribed; but as we happen to be an independent body, we must strike out for ourselves our own line of conduct, and seek to meet the requirements of the chemists and druggists of Liverpool and its vicinity. When challenged with that question, "What good is there to be got at the meetings of the Association, or what good does it do?" we must be prepared to point to some real and substantial good, to show that the time they spend here will not be spent in vain.

We find other provincial associations dealing with trade questions, promoting the interests of pharmacy generally, and prospering. Most of you have seen the Midland Counties' price list issued by that Association, the Manchester list also, and Manchester is quite ahead of us at this present moment; do you think there would be anything discreditable to this Association in its calling a general meeting of the chemists and druggists of Liverpool—to consider the desirability of curtailing our hours of business. I won't press this point too closely because it has already been dealt with, and I regret to say dismissed; but any one who gives the matter a moment's thought must see that as a large number of chemists do not close their places of business till we close our proceedings, they cannot possibly attend, and that if we valued our numerical strength it is incumbent on us to take the initiative in promoting early closing. And now I must say a word to those who hold themselves aloof and regard us only with dissatisfaction; to the student I would say, we cannot possibly provide you a royal road to a knowledge of your business or to the passing your examinations, these have to be arrived at by study—yes, just what you are pleased to call *dry* study—and there is no re-substitute; you are called to a higher standard of qualification than formerly, but barely commensurate with the requirements of the age, and you have every facility afforded you for acquiring that knowledge. This Association is one of them. To the man of business I would say, we cannot come into your pharmacy, arrange your stock, put up your books, or provide you with good customers, but we can offer you facilities for keeping up your knowledge of pharmaceutical progress, we can offer you interchange of opinion, and by your assistance can demonstrate the truth of the proverb, "unity is strength;" our united efforts could overcome many difficulties and anomalies which frequently occur in our daily vocation. To the public who do not understand the nature of the difficulties we have to contend with, the anomalies must often appear ridiculous (instances are familar to us all).

It certainly would be a discredit, collectively and individually, to the chemists of this town and neighbourhood if we *had no Association*; surely pharmacy has not reached so low a level here as to have no honest pride in such a matter. The pride I have been condemning in the early part of this address is that of *the penurious descendant of ancient nobility*. The pride I would ask is that of emulation, which will not allow us to be left in the rear—a jealousy not of a neighbour who happens to be doing better than ourselves, but for the cause of pharmacy and its advancement, its social and intellectual position.

Our business is often spoken of as intermediate between a trade and a profession, I would rather say it is a blending of the two: in the manufacture of our finer chemical and pharmaceutical preparations, in testing the purity of those purchased, in analysis and dispensing, as much knowledge and skill of its kind is required as in any of the learned professions. In selling an ordinary retail article we are strictly tradesmen; it is clear that pharmacy in its present sense was not practised in the days of Æsop. In his fable of the besieged town he tells us that each tradesman thought no other calling like his own, winding up by the currier declaring that there is nothing like leather. How rarely do we hear the pharmacists declare that there is *nothing like physic*. As a rule we feel our sphere of operations very circumscribed. The profits of our largest establishments form no very handsome income as compensation for the care, attention, and responsibility involved in conducting them. I confess to have felt this as strongly as anyone could possibly do. Let us hope then that there is something that can be looked on in making up this deficiency in pecuniary compensation.

Do you think that one per cent. of the medical men in this country are fully compensated, in a pecuniary sense, for their services? I do not; they need no eulogium from me; *virtus per se spendit semper*, and what higher or nobler aim can a man have than the alleviation of human suffering. What could induce a medical man to go through a single year's practice but the feeling that his labour is that of love, called from his warm bed on a cold winter's night, it might be to visit the haunts of wretchedness or the mansion of the great, but what to witness? *not mirth, but sadness; not pleasure, but pain;* to soothe the fevered brow, to soothe the agony of the sick or dying. This is, indeed, a sacred office, and the man who faithfully discharges it can look with confidence for a higher than his pecuniary reward. Now the duties of the pharmacist are closely allied to those of the medical man, and to the full extent to which he participates in these offices of kindness will he participate in the never-failing reward.

Toward the close of last session the United States Pharmacopœia was published, a book of considerable interest to the British Pharmacist. Two series of notes on it have been published in the *Pharmaceutical Journal*, and although somewhat elaborate, they are by no means exhaustive, many practical hints are entirely overlooked. Several of its improved preparations too appear well worthy our attention; its infusions of cinchona with acid sulph. aromat. would contain a larger amount of alkaloids than our simple infusion. They might merit a place beside, although not be substituted for it, as ammonia is often prescribed with infusion of bark in this country. The method of preparing vin. ant. tart. by first dissolving in a small quantity of boiling water, economizes time and produces an equally good article. The linimentum cantharidis, prepared by digesting cantharides in ol. tereb., would doubtless be found a rubefacient; but I will not occupy your time further with details, as I trust during the session we shall have a paper on this work.

It is probable that in the early part of 1874, an appendix to our Pharmacopœia will be published. I look on the publication of such a work as a step in the right direction. New substances or preparations are constantly being brought to the notice of the medical profession, and formulæ of these syrups, liquors, and tinctures, are prescribed, and if dispensed at half a dozen pharmacies might have as many different strengths. Ten years is too long for such a chaos to accumulate without any attempt at reducing it to order, and an appendix is a good means of accomplishing this. Many of the remedies which it is proposed to introduce in this work have already been before your notice. Important changes have recently been made in the bye-laws of the Pharmaceutical Society and in the School of Pharmacy; these have been published and freely discussed in the *Pharmaceutical Journal* and Chemist and Druggist. It is difficult to judge at present whether the results will be as satisfactory as their promoters anticipate. When we see a new bye-law created to deal a deadly blow at what has been called *cram*, and at the same time a change in the school which has every appearance of fostering the intended victim, we might be pardoned for wondering whether it is not possible to blow hot and cold with the same mouth.

And now, gentlemen, I must bring this short address to a close; in thanking you for your kind attention, let me again ask you to put forth your energies to make this session a successful one, let us feel at its close that we have done something for the advancement of pharmacy, something to prove that we have not gone through another session in vain. Perhaps I have taken a somewhat desponding view of our position, but remember "He who never doubted of his state, yet may perhaps—perhaps he may too late."

Mr. Sumner rose to propose a hearty vote of thanks to the President for his address, which was seconded in a eulogistic manner by Mr. Charles Sharp, and unanimously responded to.

A very animated discussion followed, in which Professor Murphy, Messrs. Davies, Shaw, Sumner, Mason, Sharp, Rigby, and others took part, each expressing their feeling that the President had taken far too gloomy a view of the position of the Association, showing what has been done in the past, and looking hopefully forward to the future. At a late hour the discussion was adjourned to the 23rd inst.

MANCHESTER.

MANCHESTER CHEMISTS AND DRUGGISTS' ASSOCIATION AND SCHOOL OF PHARMACY.

The fifth annual meeting of this Association was held at their rooms, on Friday evening, October 3rd, Mr. W. S. Brown, President, in the chair.

The Hon. Secretary, Mr. F. Baden Benger, read the annual report, and Mr. G. S. Woolley, Treasurer, the statement of accounts.

The report spoke of the great success of the courses of lectures delivered by Mr. Siebold. The chemistry course had been attended by thirty-six students; that on Materia Medica by thirty-one; and that on botany by twenty-nine. The committee had arranged for other three courses by the same gentleman during the forthcoming session. Four lectures and papers were given by members at the ordinary monthly meetings:—1st. On the Tests for the Alkalies, by Mr. Pidd. 2nd. On our Planet: its Weight, Size, Shape, Past History, and Present Condition, by Mr. J. T. Slugg, F.R.A.S. 3rd. On Pharmaceutical Education, by Mr. Louis Siebold. 4th. On Telegraphs, by Mr. F. Baden Benger. An appeal was made for more members. At present the funds of the Association are not sufficient to justify the Council in adding a laboratory to their school of pharmacy, as had been the original intention, or of otherwise extending the usefulness of the Association. By the death of Mr. Halliday the Association had lost an active member. The treasurer's statement showed eighty members at 10s., ninety associates at 2s. 6d., and lecture fees, amounting to £50 3s. 9d. The gross income of the Association during the past year had been £103 11s. 3d., while its expenses had amounted to £123 19s. 9d. They still had, however, a balance of about £20 in their favour.

The Chairman, in moving the adoption of the report and financial statement, said that at the last annual meeting he expressed the hope, seeing that now they had got their new rooms, and the great pains which had been taken by the Council in effecting the necessary arrangements, that he should be able to congratulate them at their next meeting on having a very large increase in the number of members. He was very sorry that he could not do that, but at the same time he must express his gratification that they had been able to hold their own. He hoped members of the trade would see their way clear to join the Association. There was no direct profit accruing from membership, and the sole object of the Association was the advancement of education, and this deserved greater support than was at present received. (Applause.)

The resolution was seconded by Mr. Marsden, and carried unanimously.

Votes of thanks were passed to the retiring officers, and the following gentlemen were elected office-bearers for the session 1873-4:—President, Mr. W. S. Brown; Vice-presidents, Mr. J. T. Slugg, F.R.A.S., and Mr. W. Wilkinson; Treasurer, Mr. G. S. Woolley; Hon. Secretary, Mr. F. Baden Benger. Council—Mr. Barnaby, Oxford-street; Mr. Blain, Bolton; Mr. Bostock, Ashton; Mr. Botham, Higher Broughton; Mr. Hargraves, Oldham; Mr. Hughes, Victoria-street; Mr. Kay, Stockport; Mr. Mumbray, Broughton;

Mr. Payne, Piccadilly; Mr. Robinson, Pendleton; Mr. Hermann Woolley, Market-street; Mr. J. Waterhouse, Ashton.

THE ANNUAL SUPPER.

At the conclusion of the annual meeting those present adjourned to the Blackfriars Hotel, where about forty members and friends sat down to supper.

The cloth having been removed, and the loyal toasts drank with becoming loyalty, Mr. G. S. Woolley proposed "The Pharmaceutical Society of Great Britain." He alluded to the early days of the Society, to the efforts of many—especially of Jacob Bell, "of glorious memory"—to induce the trade to unite together for purposes of education, and by this means to raise itself above the level of an ordinary commercial calling. The union being accomplished, and efforts in the direction of improved education continuing, the result was the Society's charter of incorporation, the completion of the splendid building now the home of the Society, with every means and appliances at hand for the education of those able to avail themselves of them, and, finally, the Pharmacy Act of 1868, which, although not perfect, still owed its many advantages, and the smallness of the number of its defects, to the untiring energy and devotion of the President and Council who were at that time at the head of affairs at Bloomsbury-square. To this union of the leading men in our body we owed the position occupied to-day, a position immensely above that held thirty years ago, and standing firmly upon it as we did, it rested solely on our own efforts whether or not we made ourselves worthy of, and attained a still higher place amongst the educated professions.

Mr. W. S. Brown, in responding, said: "I presume that, as by the favour of my fellow-members of the Pharmaceutical Society I hold a position on the Council of that body, I am called on to reply to this toast rather than our esteemed friend Mr. Wilkinson, the local secretary. Mr. Woolley has referred in feeling and appropriate terms to many honoured names among the founders of the Society. Thirty years since, when an attempt at legislative interference with our privileges called together a meeting in London, the wise judgment of some—and foremost the late Jacob Bell—saw that after accomplishing the first object of their association the opportunity to initiate a movement of a more enduring character was afforded, and they laid the foundation on which has arisen the noble institution which is, and ought to be a gratification to the whole body of chemists in this kingdom. All honour to those who thus laboured, and the results of whose efforts we are reaping in improved position, and in the development of education. The Pharmaceutical Society has some of its early friends still in its ranks, and many good and true men have risen up since and are now connected with it. We look with satisfaction to the central institution, with its excellent equipment for teaching, and hope that our provincial association may keep pace with the growing importance of the public requirements. The Pharmaceutical Society has a high and important duty to perform, and its recognition by the State, and its increasing influence throughout this and other countries promises a bright future. The approval and cordial co-operation of the members must ever strengthen and sustain the governing body, and the good wishes of such an assembly, expressed in the toast so well received, I have much pleasure, speaking on behalf of my fellow-members, and in the name of our much respected President, in gratefully acknowledging."

Mr. J. T. Slugg, F.R.A.S., proposed "The Medical Profession. He was glad to know that they were honoured by the presence of several members of that profession. This was an indication of two things: first, of the estimation in which medical men were held, or they would not have been invited; and, secondly, by the estimation in which they held the Manchester Chemists' Association, or the invitation would not have been accepted. He ever regarded the medical profession as a very high and a very holy one. It had been said that in the world were two great heaps—one of misery and one of happiness; it was every man's duty to diminish the heap of misery, and augment the amount of happiness. Now the sole occupation of a medical man was to do this; hence he said it was a high and a holy calling. Having resided in Manchester for nearly forty-five years, he was sufficiently acquainted with its medical men, past and present, to be able to say that in no provincial centre did the members of that profession devote themselves to their duties with greater zeal or ability than in Manchester. He had much pleasure in coupling with the toast the names of Dr. Tatham (Medical Officer of Health for Salford), and of Dr. Brierley.

Dr. Tatham expressed the pleasure it gave him to be present, and thanked the company for the hearty reception they had given to the toast of "The Medical Profession."

Dr. Brierley also responded to the toast.

Mr. J. Blyton proposed "Success to the Manchester Chemists and Druggists' Association and School of Pharmacy." He said it was fortunately a toast of so much importance, and one in which they were all so much interested, that it would require but few words to recommend it to their cordial acceptance. He had been familiar with chemists' associations in various parts of the country for twenty-five years; but they were societies established principally for *trade* purposes, such as regulating prices, the hours of closing, and other matters of trade interest. They owed it to the enlightened public spirit of the Manchester Chemists' Association, led by their excellent President, Mr. Brown, to have marked a great advance upon this old purpose of chemists' associations. The Manchester Society was organized and kept up mainly as a school of pharmacy, and its object was to teach their young men and apprentices the scientific part of their business.' He felt that not only Lancashire but the whole country ought to be proud of this association for the worthy aims and noble purposes it had set before it. Mr. Woolley had given them an interesting account of the rise and progress of the Pharmaceutical Society's school in London. Though not officially connected with that Society, he thought this local association's aims were in many respects the same—to send forth into the world a body of men in every way qualified for the high and responsible duties they might be called upon to perform, in the laboratory as well as in the shop. An association with such aims deserved success.

Mr. W. Wilkinson, Vice-President, in responding, said he had always taken great interest in the prosperity of the Association, and was glad to feel that it was in a fairly satisfactory condition, and to a great extent fulfilling the object for which it had been established. He considered that the classes had been most successful. He wished he could say the same of the monthly meetings, and of the endeavours to enlist the interest of the great mass of the trade. Some did not see "what they got for their money," and others said that they did not see the good of the Association. All sorts of reasons were given for avoiding payment of the subscription. He thought it arose from a mistaken notion of the object and purpose of the Association. It was *not* formed for their personal benefit. He believed everyone would admit that it was the duty of those who took apprentices either to teach them what was necessary to prepare them for the examinations, or to see that they were taught. For various reasons many were unable to do this, and it was the duty of such to support an association which does that for them which they cannot do, or do so well, themselves. The principal part of the work devolved on a few members, but it could not be carried on without funds. He hoped the Association would obtain many new members this year.

"The British Pharmaceutical Conference" was proposed by Mr. Siebold. He said, I cannot but think it unfortunate that so important a toast has not been entrusted to a better speaker, but, if you will pardon my short-comings, I will withdraw the word "unfortunate," and say that I am most happy to propose it, and that of all the toasts that have been drunk, this is precisely the one I should have selected if I had had the choice. You are well aware that the great object of the Conference is the advancement of pharmacy, by stimulating its members, and, through them, the whole profession, to scientific activity. It has not been aided in its educational efforts by Acts of Parliament, or by compulsory measures of any kind, and its influence may not, therefore, have been so widely felt as that of the Pharmaceutical Society, but it has told, and is telling with ever-increasing effect, on those who have a genuine desire for knowledge for its own sake, and who require but a good example to rouse their own energy. If we bear in mind the amount of useful work already done, and how the number of members has increased from 21 to 2,000 in ten years, we cannot resist the conviction that the British Pharmaceutical Conference will exercise an important and most beneficial influence on the future of pharmacy. Nothing is so sure to raise pharmacists to a higher rank in the social scale as their more general participation in scientific pursuits. Original research must not be looked upon as the calling of a gifted few, but as the duty of all. Every one should endeavour to add to the great store of knowledge, and, should our efforts not be successful, we shall at least be conscious of having honestly striven to serve a noble cause. Pharmacy will ultimately, and, let us hope, before very long, attain that high and honourable position which it deserves, and this end will be largely promoted by the efforts of that body whose healths I have now the honour of proposing. I have the utmost pleasure in coupling with the toast the name of a gentleman who is with us to-night, Mr. Benger, one of the general secretaries of the Conference.

Mr. **Benger**, in responding to this toast, briefly referred to the history and aims of the Conference. Alluding to the Bradford meeting, lately held, he said, that in spite of the efforts of hotel proprietors to keep people away, it had been a decided success, regarded either from a social or a scientific point of view. The hospitality of local members had been unbounded. No one present would be surprised to hear that amongst the best papers read at the Conference were the contributions of Mr. **Louis Siebold**, a gentleman whose services in connection with the Manchester School of Pharmacy were inestimable. The work done by the Conference was of course on a comparatively humble scale, but it was a cheering thought that, as Herbert Spencer had said, throughout the universe the grandest results had been brought about by the slow accumulation of minute actions. It should encourage all to feel that however little they could do, that little was worth the doing.

"The Manchester Chemists' Assistants' Association," proposed by Mr. **Hermann Woolley** and replied to by Mr. **Lane**; "The Visitors;" and other toasts followed, and a very pleasant evening was spent.

HALIFAX.

HALIFAX CHEMISTS' AND DRUGGISTS' ASSOCIATION.

The members of this society held their annual meeting on the 25th ult., when Mr. Jessop was re-elected president; with Messrs. Stott and Hebden, vice-presidents; Mr. J. B. Brierly, treasurer, and Mr. Robert Brook, honorary secretary. The report of the Executive Committee alluded to the action taken against Sir John Lubbock's Shop Hours Regulation Bill, to the formation of a select library of scientific works for the use of the members, and the success attending the appeal to the Great Northern Railway Company for a reduction of the tariff of charges for carriage of drugs from London. Mr. William Dyer, one of the delegates to the Pharmaceutical Conference at Bradford, gave an interesting summary of the proceedings of that body.

GLASGOW.

GLASGOW CHEMISTS' AND DRUGGISTS' ASSOCIATION.

The first general meeting of the Association for the session, 1873-4, was held in Anderson's University, on Wednesday, 1st October, at 9 p.m.; Mr. John Currie, President, in the chair.

The President gave a short address on education, connected with the profession now as compared with thirty years ago. He urged assistants and apprentices to be assiduous in their duties, not only to their employers, but also in connection with their studies. He was not in favour of evening classes, and thought that employers should be induced to allow their assistants to have an hour or two in the morning, as no man who had been ten or twelve hours at work was in a fit state for study.

Some conversation followed as to the formation of a library. Several new members were then elected, and the meeting dissolved.

Jas B. Jamison, the original owner of the Jamison oil farm, on which the town of Petrolia is built, recently committed suicide.

SOMETHING NEW IN FEEDING BOTTLES.

Messrs. LYNCH & Co. have patented in Great Britain and the United States an invention in respect to feeding bottles which it is difficult to describe, from its very simplicity. Round the mouth of the bottle outside are several little protuberances, and the box-wood cover, through which the tube passes, is so adapted that by slipping it on, and giving it the least twist, it is held as it were fast locked. The object of course is to prevent the inconvenient slipping off of the top, and the purpose seems perfectly attained. Messrs. Lynch and Co. inform us that they will not be able to execute orders for these for a few weeks.

COD-LIVER OIL LOAVES.

We read that compounds so-called have been introduced into French medical practice, but we have not yet had an opportunity of testing the extraordinary statement respecting them made by Messrs. Carre and Lemoine in the *Bulletin de Therapeutique*. They state that of all means of disguising the taste of cod-liver oil its introduction into bread during panification is the best. Every pound of bread should contain seventy-five grammes of oil (five table-spoonfuls) and about ninety grammes of milk. Small loaves may be made weighing 150 grammes, and containing only two spoonfuls of oil. They are very white and pleasant to look at, and have so little taste of the oil that both children and adults eat them with ease. Thirty-four of these rolls are delivered every day at the Enfants Malades for the use of M. Bouchut's little patients, and the children look out for them with pleasure. They are easily digested, and create no repugnance whatever. In private practice adults make use of them as their ordinary diet.

KHEESAH.

Kheesah is the title of a certain kind of friction glove, made from a material called burruk, which it is said has been used from time immemorial in Hindostan, Persia, and other Eastern countries for promoting a healthy action of the skin. According to Mr. Erasmus Wilson, who strongly recommends this for the purpose, the glove was introduced into England by Sir Ranald Martin (Physician to the Hon. Council of India); and an imitation perfect both as to material and appearance has been manufactured by Messrs. Savory and Moore, who produce it in the form of gloves and belts. These are exceedingly attractive in appearance, being of that special Eastern character so generally admired. In use they are very pleasant, and the texture of the material is such that its two sides present different degrees of roughness. They seem to us well suited to good class trade.

Death by Phosphorus Vapour.—A German pharmacien, in preparing a large quantity of strychnine and phosphor-paste to kill vermin, imprudently carried on the manufacture in a cellar instead of in the open air. He had several fainting fits, and died exhausted in less than a week.—*Medical Press.*

REVISED TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of the CHEMIST AND DRUGGIST, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser and with that his share in the transaction will cease.

DISPOSAL.

Four Pounds Potass. Iodid. Pur., 19s. 6d. per lb. Williams, 265, Crown-street, Liverpool.

Eighteen bottles Leeming's Essence, 20s. Carriage paid. Fortune, Anstruther.

Southall's "Cabinet Materia Medica," once handled, 13s. F. Bolton, Chemist, Dover.

Half-gallon Iron Mortar; Half-gallon Tincture Press. 5s. each. Stephens, Padstow.

A quantity of the Litre Bottle Wine Company's Wine, at 35 per cent. discount. 28/215.

An excellent time-keeping Shop Clock, 18 in. diameter; cash £1, or exchange. J. C. Thresh, Dukinfield.

Bentley's "Botany," "Selecta e Præscriptis." Cash offers. Chemicus, Apothecaries' Hall, Barnstaple.

Three Dozen Steedman's Pulv.; One Dozen Scott's Pills, 8s. 6d. a dozen. J. Bentley, Post-office, Maldon, Essex.

Camera, sliding back; lens, with diaphragms, and stand, complete; £3, cheap. R. F. Dickie, St. George's, Wellington, Salop.

A Bargain. £20 worth of genuine useful Drugs, &c., quite new, will be sold for £6; list on application. Chemicus, 5, Victoria-terrace, Northampton.

To Chemists and Dentists. A Vulcanizer, with Thermometer, and Two Flasks; in good condition. Cash price 40s.; or exchanged. 29/215.

One Cwt. Pulv. Acid. Tart.; 1s. 8d. lb. 1½ lb. Ol. Lavand. Mitcham (1871); 40s. lb. One Dozen Crown Gum Stand; 6s. 6d. Faull, Beeston, Notts.

Lock-up Amputation Instrument, Three Knives, Two Saws (one damaged), Forceps, Tourniquet, etc. 25s. Attenburrow, Hertford.

Gilt Outside Mortar, never used; height, 30 by 94 by 57 in.; made by Maw; cost £10. Offers wanted. Hamilton and Galbraith, Chemists, Glasgow.

Complete Fittings, including 2 Mahogany Cases, 69 Drawers, 1 gross Shelf Bottles, 3 doz. Jars, 1 doz. Tome's Forceps, nearly new. 216/11

7 lb. bottles Pot. Iodid., opt., 19s. lb. Gum. Opii. Turc., opt., 29s. lb. Morphia, ʒviij., 13s. Pulv. Opii. Turc., opt., lb.ij., 32s. lb. George Drury, Southwell.

One of Hooper's Water Mattresses; size 33 in. by 72 in.; quite new; will be sold a bargain. Apply, Scruton, Chemist, Collingham, Newark.

Three 14 lb. parcels Finest Turkey Opium, together or separately; price 25s. MacCallum, 5, Grass-market, Edinburgh.

A 50-gallon jacketed Copper Pan, with Taps; also a 6-in. Screw, with Brass Box, suitable for Soap Press. Offers wanted. F. Tibbs, Chalk Farm.

Harcourt and Madan's Practical Chemistry, Qualitative Exercises, nearly new. Offers wanted. Mann, Chemist, New Hampton, Middlesex.

Five Slate Cisterns, suitable for oils, &c., fitted with brass taps; dimensions and price on application. J. E. Griffith, Chemist, Bangor. Y.

Lescher's "Elements of Pharmacy," Roscoe's "Chemistry," and Buckmaster's "Chemistry." Address, F. Skinner, 13, Bury New-road, Manchester.

Chemical Apparatus, suited for performing most experiments; cheap. Send stamp for list, or state what wanted. Charles Lathbury, 27, High-street, Worcester.

An upright mahogany Glass Case, with doors, and inlaid tablet on top, with Dispensing Department written on glass, and 3 shelves at back; 4½ ft. long, 3 ft. high. Wildsmith, West-street, Leeds.

An upright Glass Case, in mahogany, the lower part 10 in. deep, with three mahogany doors, the upper part glazed, 7 in. deep; length 8 ft., height 7 ft. Sketch sent on application to Meatyard and Sapp, Basingstoke.

About 300 Drawers and Shelves, several Glass Cases, about 6 doz. Stoppered Bottles, and sundries, all suitable for second-rate shop or for Seedsmen, &c. Apply, Harrison, 87, Old Chester-road, Tranmere.

Mahogany Dispensing Screen, sliding doors. 3 dozen 1-gall. upright Stock bottles, capped and labelled. 1 12-gall., 1 10-gall., 1 8-gall. York Glass Company's Carboys, all quite new. Chemist, 12, Chalk Farm-road.

Book of Diagrams of reactions occurring in the manufacture of Pharmacopœial preparations, 2s. 8d., used to prepare for Minor. Roscoe, 3s.; ditto, 2s. 6d. Cæsar Translated, 3s. 3d. W. Coombs, 70, High-street, Worcester.

"Pharmaceutical Journal," unbound, from 1869. Cork-lined Insect Box, partly filled, 12 × 16. Zinc Killing Box. Exchange for Tooth Instruments. Buck, 277, Oxford-street.

Noad's "Qualitative Analysis," new; 3s. 9d. Compound Achromatic Microscope; 5s. 6d. Oliver's "Botany"; 3s. 4d. Wild Flowers; 1s. 2d. White's "Delectus"; 1s. 2d. H. Chambers, Haddenham, Cambridge.

Thirty-six Mahogany-fronted Drawers, with gold labels; 5 ft. long, 4 ft. high. 26-Gallon Store Bottles, gold labels, bungs, and tin caps, and 36 8-oz. Pill Jars, lilac. Kemp, Chemist, Lincoln.

Sponges. 2 lbs. Turkey, cost 16s. 8d.; 1 lb. Turkey, cost 6s.; 1 lb. Honeycomb, cost 10s. 6d. Offers wanted, or a musical box in exchange. Address, M. H. Hutchinson, Duke-street, Leith.

Binocular Microscope, first-class, quite new, with Polariscope and other apparatus, in handsome polished mahogany cabinet. Only £10 10s. Apply, B , 151, Hoxton-street, N., London. X.

Frank W. Steel wishes to exchange Half a Dozen of his Gout and Rheumatic Pills, at 1s. 1½d., with any chemist having a speciality for a like quantity of the same. Address, 283, Liverpool-road, N.

Seed Mill, Whitmere's; Hand Mirror Stand, Maw's, nearly new; Owen's "Conspectus;" "Progress of Homœopathy;" Water Bottle, patent glass top, half gallon; Chemist's Lamp, with bracket. Offers wanted. Address, Campkin, Chemist, Cambridge.

Dentists' Turning Lathe, large number of chucks, drills, centres, etc.; Sewing Machine, Jewellery, Skates, Meerschaum Pipe, Forceps, Stopping for Writing Table, Cabinet Photo. Apparatus, Books, Tools, etc. Gorton, Dentist, 20, Park-street, Worksop.

Cooper's "Surgical Dictionary," Two Vols.; "British Flora," Three Vols.; Burden's "Medical Studies"; "Pharmaceutical Journal," January to June, 1873; large French Dictionary, cheap; 15s. In good condition. Taylor, Charrington's, Lichfield.

"Elements of Pharmacy, and Guide to the Examinations," 5s. 6d.; Griffith's "Recreations in Chemistry," 1s. 6d.; Bidlake's "Elementary Chemistry," 1s. 3d.; Thomson's "Arithmetic," 1s.; "Sallust," 9d.; "Euclid," 9d. Walter Stead, Westgate, Heckmondwike.

Epps's Homœopathic Case, new; cost two guineas; 25s. Fifteen Lozenge Jars, fancy covers, tablet label, 25s. Pair 4-gallon Carboys, 16s. Twenty-six 2-gallon upright Stone Bottles, tin caps, 30s. Twenty-four 1-gallon ditto, gilt caps, 24s. "A," 153, Liverpool-road, N.

Three Ornamental Jars, handsome labels, "Honey,' "Tamarinds," "Leeches;" Iron Pillar Scales for Counter; 30-inch Boxbeam, Copper Pans; Glass Case for Counter, 8 in. deep, 16 in. wide, 32 in. long. Offers wanted. Proctor and Son, Grey-street, Newcastle.

Two handsome Specie Jars, with mahogany stands, 24 in: high, 43 in. circumference. A Mahogany Counter Case, bent plate glass, 34 in. long, 18 in. wide. A Mahogany Shop Desk, with glass front, with shelves to move. All nearly new. Bailey, Chemist, 105, Regent's Park-road.

Mahogany Counter Desk, with flap, lock, and key; two drawers under one, fitted for labels, and brass gallery top, 25 by 22 in., £2 2s. Mahogany upright Show Case, 56½ in. long, 23 in. high; two doors, glazed inside, ebonized, and 5 moveable shelves, £2 5s. Moore, Chemist, Cheltenham.

Epps' No. 2 Homœopathic Show Case; cost 17s. 3d., price 12s. Good as new. Fowler's "Medical Vocabulary;" cost 6s., price 4s. Gregory's "Conspectus;" cost 10s. price 7s. Both perfect; or would be exchanged for Attfield's "Chemistry." Simpson, 5, Hanover-place, Upper Baker-street.

Two Tin Stills, by Kemp, Edinburgh, 2 and 5 galls.; one Patent Automaton; one large Gas Stove, all nearly new; one Gallon Filter (Dahlke's), fig. 2, Maw's Catalogue, 14s., a bargain. About ½ lb. Sulphate Nickel, 5s. The above separate or one lot; will sell cheap for cash, drugs, or patents. Apply, Wm. Ward, Chemist, Berwick.

Plate Glass, with ornamented scroll, lettered "Chemist and Druggist," embossed; size 21 in. by 36 in., suitable for window or door, very handsome. Brass Scales (Avery's), ornamental pillar, mahogany stand 20 in., good condition. 48 5-grain Pill Machine. Dispensing Scales (Maw's), fig. 7; 16s. Beasley's "Formulary," 2s. 6d. Chemist, Madeira-place, Torquay.

Ointment Pan, with balls; makes 70 lbs., price £3. Log of Sassafras, about 1 cwt., 2d. per lb. Two Show Jars, 5s. each. Marble Slab, 15 in. square, 3s. 6d. Marble Mortar, very good condition, 7s. Maw's List, 11s. Withering's "Botany," 4 vols., 4s. Thomson's "London Dispensatory," 2s. Address, S. J. Potts, Chemist, Mansfield.

One Enema, brass barrel, as fig. 2, Maw's List, good as new. One ditto, rather old, requires adjusting. One Stomach Pump, as fig. 29, Maw's List. Two Breast Pumps, as fig. 4, Maw's List—require adjusting. One flat Counter Case, 13 in. broad, 9 in. deep, 28 in. long, glass top and front. One upright Case, 20 in. long, 5 in. broad, 21 in. high, exclusive of top piece. B. Wood, Halifax.

Halse's Galvanic Battery, new; £4. Six dozen pairs of Tome's best Circular Joints, checquered handles, assorted; new; 4s. per pair. A Drug Grinding Mill, suitable for a manufacturing chemist or confectioner; cost £25 six months ago, to be sold cheap. Muspratt's "Chemistry," complete; 30s. Acid Drop Machine; 20s. Address, J. G., 14, Netherthorpe-street, Sheffield.

Very handsome Plate Glass Tablet, 37 by 26 inches, in Maple, Royal Arms, Gold Lettering, "Prescriptions carefully prepared," with threo other lines; cost 8 guineas, £4 10s. 2-gallon Liebig's Condenser Tin, Copper Joints, new, 12s. Complete Fittings of Small Post-office, including Brass Plate, 32 by 10 in., for letter boxes. J. Beddard, 46, Churton-street, London.

A Window Enclosure, Mahogany, handsome; 2 12-gallon Carboys, cut glass Stoppers, £2 5s.; Handsome Jar Royal Arms, 30-in. high; about 30 feet run of 120 Drawers, with Shelving above, Mahogany Facia above; 4 Specie Jars, labelled, 15 inch, and various other effects; a quantity of Pungents in Blue and White Glass Metal and Wood Tops, at per gross, samples sent. S. B., 7, Frederick-place.

Six Show Carboys, 18 in. high, 5 lb. to 6 lb. weight, 5s. each. Two Jars, 19 in. high, weight 11½ lbs. each; ornamental gold labels, "Arrowroot," "Peruvian Bark;" 15s. each. One Jar, 21 in. high, labelled "Magnesia," price 17s. 6d. Upright Show Case, Spanish mahogany and plate glass, perfect, 4 ft. 3 in. long, 2 ft. 2 in. high; price £3. Case for desk, same description, 35 in. high, 28 in. wide, 36s. Hahnemann's Bust, 31 in. high, perfect, 12s. All prices cash. J. Floyd, Bury St. Edmunds.

Fine new Camomiles; Fol. Sennæ Tin. Rad. Rhei, E.I.; casks refined Petroleum; large stock Drugs, Chemicals, Sundries, Specie Jars, Carboys, Shop Bottles, Pill Machines, Cockle's, Norton's, Powell's, Steedman's, Whelpton's, Winslow's, Allcock's, Browne's Chlorodyne Troches, 9s. doz.; Stedman's, 7s. 3d.; Allen's Restorer 42s.; Mexican, 24s.; Zylobalsamum, 22s.; Floriline, 20s. Ext. Carnis, Liebig Company's, 14s. 9d.; Tooth's 14s. 6d.; Ramornie's, 12s. 10d. Stamp for list. Lloyd Rayner, 309, New North-road, Islington, N.

Free Bateman's "Magnacopia," 2s; "Chemical Pocket Book," 1s. 6d.; Steggall's "Celsus," translation, 2s.; Guernsey's "Homœopathic Practice" (Thomas), 2s. 9d.; Dudgeon's "Homœopathic Lectures," 3s.; Berjeau's "Syphilis," 2s.; Burt's "Anatomy," 16 plates, only stained, 4s. 6d. (published 17s.), new; Snow Harris's works; "Magnetism," 2s. 6d.; "Galvanism," 1s.; "Electricity," 1s. Johnstone's "Elements of Agricultural Chemistry," 2s. 6d.; Royal Academy Sciences, Paris, 5 vols., calf, complete, translation, 7s. 6d. A. Davis, 161, Seven Sisters'-road, London, N.

Riddle's "Young Scholars' Latin-English Dictionary, published 6s., price 3s. 6d.; Cæsar's "Comment. c. Supliment, 12th edition, 1s. 6d., published 2s 6d.; Roscoe's "Chemistry," new edition, 3s.; "Selecta Prescriptis," 2s., 8th edition; Owen's "Conspectus," second edition, 2s. 6d.; Bentley's "Botany," 8s. 6d., Fowne's "Chemistry," 8s. 6d., 9th edition, both as good as new; "Public Schools Latin Primer," "Child's Latin Primer," 1s. each, both new, Kennedy's; Valpy's "Latin Grammar," new, 1s. 6d.; "Modern Practice of Physic," 2 vols., 11th edition, by R. Thomas, M.D., published 28s., 10s. 6d.; all in good condition. ¼ dozen Rowland's Odonto, 2s. 9d., quite clean, 4s. 6d. the three; Gas Stove for heating a Shop, five burners, and one at the top for boiling water, maker Nock, Birmingham, in good condition, price 15s., or offers; 1 large, 1 small Comoline Restorer, 2s. 6d., 1s. 6d.; 1 Small Glass, 1s. 6d. Address, J. F. E., 140, Embden-street, Hulme, Manchester.

Handsome Shop Fixtures, in polished pitch-pine, ebonized in relief, consisting of noble counter, with solid mahogany top, and fitted with drawers, complete, 14 ft. long, 27 in. wide, 3 ft. high, ornamented in front with magnificent terra cotta imitation carvings; joined to this by a circular end is another length of 4½ ft., forming the dispensing counter; a nest of 120 large and small drawers, with glass knobs and gold labels, under which are a dozen bins for dispensing bottles, &c., all fitted with doors; also a smaller nest of 26 drawers, and 3 bins, as the last (the carcase is 4 ft. 8 in. high); shelving window casing, inlaid with enamelled glass, 2 × 6 gallon show carboys, suspended in massive gilded wrought iron brackets; shelving and ornamental cornices; one magnificent side counter; cupboards, 8½ in. deep, with doors to open, and deal shelf inside, with glass case above, about 6 in. deep, with doors to open, and four polished shifting shelves inside, 8 ft. long and the same in height, somewhat similar to Maw's, Fig. 205, but with ornamental cornice and circular plate-glass ends. One Mahogany Show Case, as Maw's, Fig. 16; one ditto, with desk behind, as Maw's, Fig. 38; this is 32 in. high, with carving and glass tablet, lettered "Patent Medicines;" one ditto, as Maw's, Fig. 40, but with two folding doors, 2 ft. 6 in. long, 25 in. high, with carving and plate glass tablet, on top lettered "dispensing department," with three plate glass shelves, and silvered plate glass ends, and every other requisite, bottles excepted. The whole are nearly new, and will be sold cheap. Apply to A. Butterworth, pharmacist, Bradford, Yorkshire.

"Pharmaceutical Journal," from 1841 to 1871, complete, and in good preservation, 30 vols., 14 bound in half leather, remainder unbound. To be sold to the highest bidder for cash. Please offer. Mr. Stanley, Lockyer-street, Plymouth.

WANTED.

Hooper's Dictionary. Will give good price. H. Stephens, Stone.

Nelson's Patent Opaque Gelatine, loose or in packets. Lowe, Chemist, Chesterfield.

Six Wire Blinds, 3 feet by 2 feet. Six dozen large Gold Labels. 24/216.

Two 6 or 8-gallon Pear-shaped Carboys. Giles, Leeds, and Chapel Allerton, Leeds.

Second-hand Analytical Balance, in good working order. Send full particulars and lowest cash price. 5/217.

Two 6 or 8-gallon Carboys. Lowest price to "G.," 153, Liverpool-road, London, N.

Chemical Apparatus, adapted to Galloway's "First Step." State lowest price. 10/216.

Two Bent Glass and One Upright Counter Cases. State size, condition, and price. Botham, Chemist, Yeovil.

Prospectus of apparatus for forcing petroleum from cellar to shop, with measure attached, to avoid leakage and smell. Wiggin, Ipswich.

Four Specie Jars. State size, description, price, &c. Also Four or Six Globes, 22 or 24 inches high. Twelve-gallon Macerators. Holt, Deansgate, Manchester.

Four Specie Jars, 18 inches high to top of cover, in good condition, with or without stands. M.P.S., 90, Oxford-street, Swansea.

A Dispensing Counter Screen. Also Latest Edition of Fownes' "Manual of Chemistry." Address, E. Ling, Chemist, Esher, Surrey.

Counter, about 10 ft. long, 2 ft. wide; Squire's and "British Pharmacopœia." Scales similar to Mather's, Fig. 1. Horniblow, Charlbury.

Three Specie Jars, with Covers; also Three Carboys, with Stoppers. State size, price, and condition. Robertson, 302, Camberwell-green, S.E.

Screen or Tablet Gold Labelled Galvanism, medically applied; Two small Specie Jars; Pair Quart Cut Perfume Decanters; good Galvanic Battery; Screen or Tablet, Gold Labelled "Chemist and Dentist." Stephens, Padstow.

Twelve N. M. W. G. S. Bottles, with or without Labels, to hold 80 ozs., diameter at bottom 4½ in., height to shoulder 9 in., to stopper 12 in. Also "Pharmaceutical Journal," day or two after publication. B., 37, Newgate-street, London.

Two dozen 20 oz. and 1 dozen 8 oz. N. M.; 1½ dozen 20 oz. and 1 dozen 8 oz. W.M.; labelled Shop Rounds, ½ dozen 4 lb; 1 dozen 8 oz. labelled Shop Jars; 5-grain Pill Machine; 8 16 and 64 oz. W. wood Mortars. In good condition. State lowest price. Small Nest of Drawers, labelled. A. B., Post-office, Codnor, Derby.

OBITUARY.

On the 6th September, Mr. Joseph Bettison, pharmaceutical chemist, of Chesterfield.

On the 8th September, at his residence, Willow Bank, Green Heys, Manchester, aged 68, Henry R. S. Jewsbury, formerly of the firm of Jewsbury and Brown, Manchester.

On September 15th, Mr. Jonathan Chater, pharmaceutical chemist, of Watford.

On September 15th, at Harrogate, Dr. J. Evans, of Dawson-street, Dublin, formerly a partner in the firm of Bewley and Evans.

On the 20th September, Dr. Julius Martiny, of Suhl, an honorary member of the Pharmaceutical Society.

On the 26th September, Mr. Edward H. Crumpton, chemist and druggist, of Cornwall-road, Westbourne-park.

Trade Memoranda.

The Silicated Carbon Filter Company have sent us one of their new show cards, with illustrations of five of their most selling patterns. The cards, which are quite works of art, have been produced by Crenmitz, of Paris.

The druggists of Lincoln have agreed to close at seven o'clock during the ensuing winter, commencing on the 1st inst.

According to a circular recently issued, it appears that Mr. Bollman Condy and Dr. Mitchell, trading as Bollman Condy and Co., of Battersea, have dissolved partnership, and that a Chancery action is pending as to the goodwill of the business.

Mr. C. J. Boorman has succeeded to the business of Mr. Gwillim, of Malvern Link.

Mr. John Guy has removed from Taiom-road, Chester, into new premises, at Richmond-place, Boughton, Chester.

Mr. Towle, of Manchester, has this season manufactured some chlorodyne lozenges of the hard character, strongly, but not disagreeably impregnated with the medicine, which are certainly excellent. In a note lately received from him, he reminds us that his chlorodyne started with our journal, for which he sent the first formula for chlorodyne ever published. "On our mutual success," he adds, "we may congratulate each other." May we all three, Mr. Towle, his chlorodyne, and the CHEMIST AND DRUGGIST, live for ever.

Messrs. Bristow, Edmonds, and Williams, wholesale perfumers, of Bishopsgate Avenue, have brought out a "Pure Coal Tar Soap," the speciality of which consists in that it retains the hygienic virtues of coal tar, but is deprived of the useless, inert colouring matter which renders soaps of this character objectionable.

We may mention as a useful article of sale in agricultural districts the "Concentrated Spice Mixture" of Messrs. McMaster, Hodgson, and Co., of Dublin.

Messrs. McMaster and Co. have sent us in the same parcel a few specimens of their excellent perfumery. Their "British Eau de Cologne" is especially worthy of notice, and this, like their other bottles of perfumery, is provided with a patent sprinkler stopper.

PUBLIC ANALYST.—Mr. C. H. Piesse has been appointed public analyst for the Strand district.

Mr. Young, pharmaceutical chemist, Leicester, has been appointed public analyst for the borough and county. He is to be paid 10s. for each analysis, and if these fees should not reach £100 per annum, that sum is to be made up, the borough contributing four-tenths, and the county six-tenths.

THE LANCET.—A dinner was given on the 4th inst., by the proprietors of the *Lancet*, at the Freemason's Tavern, to the members of their staff and some professional friends, in celebration of the 50th anniversary of that journal. Dr. J. G. Wakley, the editor, took the chair, and, in the course of an interesting address, he touched upon various reforms in the medical profession that had been promoted through the medium of the *Lancet*, under the direction of his late father, Mr. Thomas Wakley, while discharging the fourfold duty of surgeon, coroner, editor, and member for Finsbury. In conclusion, Dr. Wakley declared his determination of continuing the policy with which the *Lancet* had always been identified.

THE CHEMIST AND DRUGGIST

COLONIAL BUILDINGS, CANNON-ST., LONDON, E.C.

Advertisements, Remittances, Subscriptions, Orders for Copies, and all communications must be addressed to "**THE PUBLISHER**" of The Chemist and Druggist

Cheques and Post-office Orders to be made payable to *Edward Halse*, and crossed Martin & Co.

No one is authorised to collect money without production of the Proprietors' lithographed form of receipt.

Receipts not forwarded for sums under 10s., unless the remittance be accompanied by a stamped envelope.

SCALE OF CHARGES FOR ADVERTISEMENTS.

One Page £5; Half Page £2 15s.; Quarter Page £1 12s. Special Rates for Wrapper, and the pages preceding and following literary matter. The above Scale of Charges will be subject to a discount of 10 per cent. upon Six, and 20 per cent. upon Thirteen insertions. Seven Lines and under, 4s. 6d.; every additional Line, 6d.

Advertisements of Assistants Wanting Situations (not exceeding 12 words) inserted at a nominal charge of 1s. each.

All Advertisements intended for insertion in the current Month must be sent to **THE PUBLISHER** of The Chemist and Druggist on or before the 12th, except Employers and Assistants' Advertisements, which can be received up to 10 a.m. on the morning previous to publication.

Subscribers are requested to observe that the receipt of The Chemist and Druggist in a *Green Wrapper* indicates that with that number the term of subscription has expired, and that no further numbers will be sent until the same has been renewed. We issue the notice very respectfully, not that we distrust our Subscribers, but simply because we find it impossible to keep an immense subscription list like that we now have, extending to almost every town in the world, in order without an exact system like this.

FOREIGN AGENTS.

Adelaide	Messrs.	Faulding and Co.
Auckland	,,	Kempthorne, Prosser, and Co.
Boston, U.S.	,,	Office of "Boston Journal of Chemistry."
Calcutta	,,	Bathgate and Co.
Chicago	,,	W. A. Wood and Co.
Dunedin	,,	Kempthorne, Prosser, and Co.
Melbourne	,,	Felton, Grimwade, and Co.
Montreal	,,	Evans, Mercer, and Co.
New Orleans	,,	E. J. Hart and Co.
New York	Mr.	P. M. Sherwood, 85, Liberty-street.
Philadelphia	,,	W. M Dickson, 619, Walnut-street.
San Francisco	Messrs.	Bancroft and Co.

Terms for Advertisements over the Leaders may be obtained on application to the Publisher.

We beg to inform our foreign subscribers that the partially unstitched condition in which they receive this journal is in accordance with a regulation of the English Post-office. In common with our contemporaries, to all of whom the same law applies, we are totally ignorant of the purpose of this vexatious rule. We have in vain protested privately against a regulation which compels us to appear before our readers somewhat untidily; and now we feel it due to ourselves to make this public explanation.

DOMESTIC FILTRATION.

"WITH regard to the Silicated Carbon Filters, I have made many experiments upon them, and have been astonished at the energy and rapidity of their action. I passed through a small Filter of this make some of the worst description of water supplied by the London Water Companies, and found it, after filtration, to have become as pure as the very best London water. My experiments show that the Filter exercises a decomposing action—a chemical action—on the Organic impurities in Drinking Water. I have no doubt that Water, which is dangerous from the Organic Matter contained in it, becomes *safe* on passing through the Silicated Carbon Filter. A point of some importance, shown by my experiments, is that a Second Filtration still further improves the quality of Drinking Water. After being in use for a considerable period, Filters lose their power and require renovation. I have found that the passage of a little Hot Water through the Silicated Carbon filter, and afterwards blowing a little air through it, restores its power."

J. ALFRED WANKLYN, M.R.C.S., London,
Formerly Professor of Chemistry in the London Institution; Joint Author of a Book on Water Analysis, and of the Ammonia Process.

POROUS BATTERY CELLS
OF SUPERIOR QUALITY.
PATENT PLUMBAGO CRUCIBLE COMPANY,
Sole Makers of Morgan's Patent Crucibles,
BATTERSEA WORKS, LONDON, S.W.

RENDALL'S THEOBROMINE,
OR
CONCENTRATED COCOA.

THE purity and excellence of this Cocoa is obtaining for it an increasing demand.

Sold by most respectable Chemists in 1s., 2s., 3s. 9d., and 7s. 6d. tins.

To be obtained through the Wholesale Houses, or direct from the Proprietor,

J. M. RENDALL,
28, QUEEN STREET, EXETER.

VICHY WATER COMPANY,
27, MARGARET STREET, REGENT STREET,
LONDON.
General Depôt for all Mineral Waters.

EDITORIAL

INACCURATE DISPENSING.

SOME excitement was aroused in medical and pharmaceutical circles by a report in the police intelligence of the daily papers lately that "a medical man whose name did not transpire" had applied to the Hammersmith magistrates for some advice as to how he should act with a chemist, who, he said, had incorrectly dispensed a prescription which he (the medical gentleman) had written. This same medical gentleman was reported to have intimated that it was by no means an unusual practice for chemists to omit expensive medicines, or such as they might not have by them, and perhaps substitute other ingredients. According to Mr. Woolrych, the magistrate, there was no remedy in such a case against a chemist and druggist unless the patient should die, when he might be tried for manslaughter. The magistrate added, however, that the matter was one of great importance, and should be fully looked into. An apothecary would be legally liable in such a case. There was some difficulty in getting at the parties in this case, but we thought it a matter of considerable importance to our readers that the exact facts of the affair should be placed before them, and we are now able to give full details, which were furnished to our representative both by the physician and the chemist for the purpose of publication in the Chemist and Druggist. We may add that the account given by both parties was substantially identical.

The physician was Mr. John Scoffern, M.B., formerly professor of chemistry and forensic medicine at the Aldersgate College of Medicine, and well known as a popular writer on chemical and technical subjects. The chemist was Mr. A. Hunt, of Kensal-road, Westbourne-park. The patient was an infant in the neighbourhood, aged seven months. The chemist seems to do some prescribing business, and a doctor attends at his shop occasionally. Some medicine had been prescribed for the baby from this establishment before it came under the care of Mr. Scoffern. Either alone or among other things lime water had been given. Mr. Scoffern says that the child was suffering from choleraic diarrhœa. On Sunday, the 28th of September, the mother applied to Mr. Scoffern for advice. That gentleman gave the following prescription:—

℞ Syr. papav. alb., ʒij.
Calcis sulphitis, gr. xx.
Pulv. tragac. co., gr. xv.
Aq. anethi ad., ℥iss.

Mft. mist., ʒj., post sedes liq. sing. vel omnibus 2$^{\text{ndis}}$ horis.

Mr. Scoffern says he had great reliance on the sulphite of lime, which he has never known to fail. This was taken to the chemist at 3 p.m. on the Sunday.

He had not the sulphite of lime, and made up the mixture with some lime water instead. On his second visit that evening Mr. Scoffern noticed that the mixture did not look as it should, whereupon he visited the chemist, who acknowledged what he had done. The child died on the Friday morning following, previous to which the visit to the magistrate had been made. Mr. Scoffern wishes us to inform the trade that he made no such assertion, as was reported of him, with respect to its being a general custom with dispensing chemists to substitute medicines in prescriptions. What he did say was that such instances had previously occurred in his experience. Mr. Hunt, too, informs us that the mother of the child has written to him exonerating him from blame in the matter.

Such, as briefly as we can give them, are the facts we have gathered concerning this important matter. As we are not sure whether it will come under legal notice again, we purposely forbear making any comment whatever.

MR. INCE ON THE SCHOOL OF PHARMACY.

Mr. Joseph Ince sends us some comments on the educational controversy which has lately arisen, in consequence of the action of the Pharmaceutical Council in reference to the School of Pharmacy. Our own idea of the course which the Council has taken is quite different from that which Mr. Ince seems to hold. His views are thus expressed:—

First.—It was the duty, and a necessity, on the part of the Society at its commencement, to educate as well as to examine. The founders had to *create* English scientific pharmacy—the necessity was met, and the duty was performed, nobly and well.

Second.—We think it would be wise, though it is no longer a necessity, to continue the parental character. We cannot conceive the shadow of an anomaly between the Society as an educational and an examining body. We see many reasons for the continuance of this association of its functions.

Third. The scheme of condensed lecturing issued by *us*, and officially patronized by *us*, seems "incomprehensible," a phrase introduced into our vocabulary long before its use by the ex-president of the Conference. It is a sore reflection on the requirements with which the examiners must be supposed to rest satisfied; it would be a strong temptation to our young men to sciolism, were it not a stronger for them to stay away from our institution, and seek out better opportunities. With such a system the existence of the Conference would have been impossible, and we shall have a race of men whom a well-directed apprenticeship would have equally qualified for the duties of the counter. Nor can the Society thus hope to compete (the one origin of the change) with the enterprising educational movement existing in the South London School.

Fourth. We imagine the time to have now come when the Society might abandon elementary education altogether. We see no reason why the student should not learn his pharmacy how, where, and when he chooses. Professors of established reputation need not fear but that they will largely increase their income. Let us, as a learned body, continue our evening meetings, and institute regular lectures on the higher branches of our art. Having a board of examiners under Government authority, the public will not be slow to respect us as individuals, and we may yet, as a last improvement, have the privilege of writing after our names the title of Fellow of the Pharmaceutical Society.

NÉLATON.

The illness and death of Nélaton, the famous French surgeon, called forth an extraordinary degree of sympathy from the Parisian public. Nélaton was for many years in the first rank of the French medical profession, but he bounded into world-wide popularity by his extraction of the bullet from Garibaldi's foot in 1863, when the English surgeons had declared it to be *non-inventus*. Highly honoured by the Emperor, Nélaton experienced no reaction of public favour when the Empire had fallen, as did so many of those who had been stars in the same Court. It is often difficult to account for Parisian popularity, but not so in this case. Nélaton was not loved by the French people because he was a Court favourite, but rather in spite of this accident; chiefly, however, because he was a true-hearted, able, and unassuming man. His assiduous care of the cases he undertook was most remarkable, and invariably won for him the respectful affection of all the friends of any of his patients, as well as of those patients themselves. And yet it is said that Nélaton left behind him but few private friends. Even in praising him one of the journals describes him as a man "*Egoïste et sec.*" But such men, though they do not carry their hearts on their sleeves, are often men of the tenderest feelings. Only lately we told how a stranger in one of the Paris hospitals saw a noble-looking gentleman stoop down to kiss the wasted face of a poor little sufferer who held his hand with childish affection, and how that gentleman proved to be Nélaton. The French journals tell many anecdotes of this man, and of his skill. One very characteristic and instructive one is quite worth repeating. He was the principal at a very serious operation one day, and noticing one of his assistants a little flurried, he quietly remarked, "You are too quick, my friend; do you not see that we have no time to lose?" Another time he said to his pupils, "If you should have the misfortune in operating to cut an artery, remember that it will be two minutes before fainting occurs, and about another two minutes between that and death. Now four minutes is four times the period necessary to bind the vessel, *provided you do not hurry.*" He had long expected his death, and awaited it with extreme resignation. The ex-Empress wrote to him several times during his illness, and he frequently read and re-read her kind letters. On the night preceding his death he conversed for some time with his son and his nephew. His advice to them was given in these weighty words—"Do much good in your lives, and make but little noise" (*Faites beaucoup de bien dans la vie, et surtout peu de bruit*). In his last will he desires his wife to train his son "in the sentiments of religion, honour, and work." France and Europe may well honour the memory of a man whose words and life were so noble.

THE VIENNA AWARDS.

We have before us the official list of the exhibitors at the Vienna "Weltausstellung," to whom diplomas and medals have been granted. It is an immense book of 529 pages, each page averaging some fifty to sixty names. As we have previously pointed out, the Diplomas of Honour are the most eminent distinctions, and have been awarded in a sufficiently sparing number to make them of real value. "The Diploma of Honour," says the official guide, "is to be considered as a particular distinction for eminent merits in the domain of science, its application to the education of the people, and its conducement to the intellectual, moral, and material welfare of man." A Diploma of Honour has been awarded to Dr. Liebreich for his discovery of chloral hydrate and its medicinal application. A similar honour to Dr. Liebermann, also of Berlin, for his invention of the method of preparing alizarin from coal tar. Several French and German firms have gained diplomas for their manufactures of dyes, and one is awarded to the Netherlands Government for cultivation of the cinchona trees. The Anglo-Swiss Condensed Milk Company and the Liebig's Extract of Meat Company have won diplomas in the Food Group, where Anton Dreher, the celebrated Vienna brewer, is similarly distinguished. His beer can hardly be said to have aided the education of the people, and therefore we must presume that in the opinion of the jury it has conduced "to the advancement of the intellectual, moral, and material welfare of man." What say the Good Templars to this? In Group 14 (scientific instruments) we find a diploma for surgical instruments awarded to Collin, of Paris, one for balances to Hugo Schickert, of Dresden, and one for dentists' instruments to Samuel S. White, of Philadelphia.

With regard to the medals awarded, we may here call attention to a letter from Mr. Rimmel which appears in another part of this issue. Like our correspondent, we believe all who had interested themselves in the Vienna Exhibition were surprised at the decision come to at the meeting of presidents on July 2nd, resolving that the various medals should be regarded as "perfectly equal in rank and value." We are well aware that this surprise was shared by the juries which had devoted so much care to the discrimination of the exhibits, and now found their anxious labours quietly over-ridden. Mr. Rimmel puts the case very forcibly when he says that the presidents, though they had undoubtedly the power to control and alter if they thought fit the decision of the jury, had, or at least ought not to have had, the power of swamping the whole system. The case, at any rate, is open to discussion.

UNUSUAL DOSES IN PRESCRIPTIONS.

The solution arrived at by the Pharmaceutical Conference to recommend a special sign—namely, a repetition of the initials—to be attached to any unusual dose ordered in a prescription has been widely disseminated by the daily and medical journals, and, we hope, has or will be also formally communicated to the presidents of the medical societies, as suggested by Professor Attfield. At any rate, it will be fair to assume that those physicians who write most of the prescriptions, will have had this recommendation brought under their notice. But one point in connection with it seems to have escaped the notice of the gentlemen who took part in the discussion at Bradford. It is however of considerable importance. We have not in England such a definite guide to the posology of strong medicines as in Germany, and it is quite possible that a difference of opinion might occur as to what should constitute an unusual dose. Would it not be advisable to urge the gentlemen who are believed to be engaged on a supplement to our Pharmacopœia to insert in that supplement a table of maximum doses similar to that in the German Pharmacopœia. The observance of the suggestion would not thereby be made compulsory, but it would be placed before prescribing physicians in the most official and prominent manner that could be devised.

PROFESSORIAL FUN.

At the close of the recent session of the American Association for the Advancement of Science at Portland, one evening was devoted to a style of amusement only too tempting. It was announced as Section Q, and a very large audience assembled to hear Professor Morse and others deliver burlesque lectures. Professor Morse took a curiously curved fossil bone recently discovered, and having represented it on the black board, he rapidly built up from it the figure of a hideous tom cat, lecturing all the time on anatomical matters in the most serious and scientific manner. The fossil turned out to be a jug handle. Professor White next held forth on ancient shell heaps, and produced a heavy bag, which, he said, contained specimens collected near Portland. A broken shovel, a stone bottle, a lobster, and a pile of clam shells were recognised, amidst peals of laughter, as relics of the recent clam bake participated in by the Association. Each separate article was then described in connection with the peculiarities of the race that had used it, as indicated by its condition. Perhaps the most amusing of these was a corn cob, which indicated the size of the mouth by the bite that had been taken out of it. A blackboard drawing was then made to illustrate a race with these peculiarities. "You can infer," said the speaker, alluding to a paper of no great value read the previous day, "that the length of this mouth indicates that its maternal grandmamma must have been very long lived." Several other speakers read ludicrous papers, their remarks being illustrated by Professor Morse with grotesque sketches on the blackboard.

APATHY.

What shall we say of the metropolitan chemists? Some of them have, at various times, complained of the unfair burden of the Patent Medicine Licence, they having to pay forty shillings per annum, while in the country ten shillings and in other than corporate towns five shillings only is required. This is thought to be so much the more unfair, inasmuch as it is asserted that country chemists do a much larger proportion of business in patents than those of London. A letter, somewhat to this effect, appeared in our journal last month, and the subject has turned up at divers times during the past few years in various ways. Probably from seeing the letter in our pages the National Chamber of Trade took up the subject, and sent invitations to some six hundred London chemists to meet and discuss the matter. The Chamber was influential enough to get reporters from five daily papers, besides the representatives of the Chemist and Druggist and the *Pharmaceutical Journal.* Mr. Haselden was present as chairman, but the remaining attendance was so wretchedly meagre that it was impossible seriously to hold a meeting. The chance of agitation is therefore gone by, and the metropolitan chemists have only themselves to thank. At the same time we think it a pity that the meeting was held without giving us an opportunity of announcing it, when the attendance would no doubt have been better.

THE INVENTOR OF FEEDING BOTTLES.

Mr. Edward O'Connell, of Bolton, Lancashire, the original inventor of the Siphonia Nursing Bottle, from which idea such a multitude of more or less similar designs have sprung, has written a little book which he asks chemists to sell, in which he narrates the story of the invention, and also adds some concise directions to mothers respecting artificial rearing. We are quite aware that Mr. O'Connell was really the inventor of this class of bottle, and in many senses the value of that invention has proved incalculable. It is therefore with considerable regret that we read his statement, that he has "derived little or no pecuniary benefit from his invention, and is now beyond the prime of life and rendered through ill-health unable to follow his former occupation, that of engineering surveyor and draughtsman." We can hardly venture to hope that Mr. O'Connell will realize much benefit from the sale of this book. But we are not at all sure that the large manufacturers who have made such good use of Mr. O'Connell's invention, do not owe him a handsome testimonial. The modern system is to let him die first and then raise a statue.

PHARMACEUTICAL GOOD TEMPLARS.

A new hospital has been established in London, near that of University College, which is to be conducted on strictly teetotal principles. Not content with excluding brandy, whiskey, port wine, and other such-like frequently adopted aids to treatment, including even the medical editors' darling Robur, the managers of this experiment are determined to separate themselves entirely from the unclean thing by eschewing even alcoholic tinctures. They believe that glycerine and pure water will serve them as menstrua in all necessary cases, and we presume pills and powders will be expected to do the rest of the work. We shall certainly not condemn the enterprise till we know its results, which we hope will justify the faith even of its promoters.

THE SULPHURIC ACID MANUFACTURE.

During the late meeting of the French Association for the Advancement of Science at Lyons, M. Aimé Girard gave an interesting popular lecture on the modern progress of chemical industry. He first discoursed on sulphuric acid, and traced the growth and importance of this manufacture. Forty years' ago, twenty million kilogrammes of sulphur sufficed to provide for all the sulphuric acid manufactured. Now, if sulphur were employed, two hundred and fifty millions of kilogrammes would be necessary. But sulphur has been discarded in favour of iron pyrites as the base of the manufacture. These were first experimented on for the purpose by D'Artigues, in 1793, at the time when France was cut off from all the rest of Europe. But he failed, and a similar result awaited some English experimenters about the year 1818. Ultimately at Lyons itself the desired end was accomplished by the sulphuric acid manufactory there in 1830. At this time M. Girard reckons the annual production of concentrated sulphuric acid throughout Europe does not fall short of 800 millions of kilogrammes. He stated that this quantity would fill a canal 2 metres deep, 10 metres broad, and nearly 30 kilometres long.

NEW YORK TRADE.

A large wholesale grocer in New York (Henry Welsh) advertises his system of business in a somewhat original manner, but his circular presents some commercial truths so incisively, that we think English readers will probably be interested in noting a few short extracts from it. First, Mr. Welsh tells the world that he sells all goods at lowest market value the day orders come to hand. He says—

"You will please attend to this notice, and understand that when you limit me to prices in your orders for goods, if the market is lower I will put prices lower, or if your prices are the same as mine, on receipt of your order, in either case, I will ship you the goods; but if your figures are lower than the market I will pay no attention whatever to your orders. So please remember this."

Then he "goes for" those customers who order sugars only from him. They are to send him a cheque with order, or else favour him "by doing business elsewhere," for says he, "I can realize more by loaning my money in Wall-street on unquestionable collaterals than I can by loaning it to them in the shape of refined sugars, without any security."

He then proceeds to attack various species of customers, among them "Parties in the habit of claiming deductions." Of this class he says, there are, unfortunately, some who think it a high privilege to be permitted to sell them goods, and will take every opportunity to find fault with the goods sent them, and to claim deductions. Now all such will bear in mind that by trading elsewhere they will compel my lasting gratitude.

Mixing in with this a little discreet flattery of those whom he recognises as his regular customers, he continues, "Some folks may say this is not business, and that it is rather independent. I say it is business and that every merchant, wholesale and retail, has a right and duty to be independent. My goods are full value for the money they are sold for. I buy my goods down at the lowest hard pan and sell them as low or lower than any house in this city, as every merchant in this city can testify. I use my customers squarely and liberally, and they kindly reciprocate. As the best evidence of this my trade is increasing in the ratio of millions annually."

The conclusion of the circular is very good:—"We are not perfect, nor do we claim to be so by any means. Owing to our being always very busy here from June to January, we often make mistakes—myself, my clerks, in fact all of us here. You do sometimes, I suppose. When we are in error or make mistakes of any kind, please report, and I will rectify them instantly, as all my customers know we are in the habit of doing."

PROCEEDINGS OF THE PHARMACEUTICAL COUNCIL.

October 1st, 1873.

The President (Mr. Hills) was absent on account of the serious illness of his intimate friend Sir Edwin Landseer, the chair was therefore taken by the Vice-President, Mr. Bottle.

After the formal business, an interesting discussion took place respecting the Benevolent Fund. In consequence of the death of one of the annuitants, a vacancy has occurred, and Mr. Robbins urged that the Council should place three annuitants on the list instead of one. When the fund had reached £10,000 it was thought safe to grant ten annuities; now it was over £13,000, and Mr. Robbins argued that being guided by the Government annuity tables, they had sufficient money *over* £10,000 to buy ten annuities. He thought that by extending the benefits of the fund subscriptions would increase, and he also thought that to some extent chemists and druggists of the future should be required to provide for their own poor. Mr. Owen seconded the proposal, but afterwards somewhat repented when he learned that the present income was barely sufficient to pay the annuitants now on the list. Mr. Williams, Mr. Urwick, and Mr. Brown strongly opposed any step which would touch the capital of the fund, but somehow, not very clearly how, a resolution was arrived at agreeing to the election of *two* annuitants in the place of one.

A letter was read from Mr. John Moss, resigning his post as Demonstrator in the Laboratory. Mr. Moss had accepted an appointment in the laboratory of Messrs. Corbyn, the place vacated by Mr. C. H. Wood on his appointment as quinologist in India.

The new bye-laws came up again, and Mr. Frazer brought out a curious result from the new regulations, a wrinkle worth knowing by those aspirants to pharmaceutical honours whose aim, in Mr. Sandford's words, is to cheat the examiners. After Dec. 31, 1874, as is well known, the Minor is to be made stiffer and the Major somewhat lighter, at least as far as number of subjects is concerned. It follows therefore that a student who takes advantage of the present Minor and the new Major will gain, at all events, an apparent advantage.

The discussion of the day was inaugurated by Mr. Sandford who moved, first, that the examinations for the Jacob Bell Memorial Scholarships, the Pereira Medal, and the prize of books, should henceforth be conducted only by the Boards of Examiners in London and Edinburgh. Mr. Mackay seconded this proposal, taking the opportunity, however, of intimating that he should oppose the second part of Mr. Sandford's scheme, which was to annihilate the local preliminary examinations, and bring all candidates to London, or demand from them one of the specified certificates. This is regarded as one of Mr. Sandford's pet schemes, and some people imagine that his ultimate object is to restore the despotic power which London once exercised over the whole country. Mr. Hampson uttered the word "centralization," and one after another the representatives of Bristol, Manchester, Liverpool, Hull, Sheffield, and Glasgow, rose indignant. It was argued that if there had been mistakes, though none had been instanced, it would be better to try to correct these than upset a system which had worked well on the whole. Ultimately it was agreed to refer both propositions to the General Purposes Committee, which was to confer with the Board of Examiners, and report to the Council. Mr. Sandford had reason to be thankful for even that show of mercy to his darling, for at one time it looked as though the second and most important half of the scheme would be strangled on the spot. A majority of one, however, decided for transportation.

The final business reported was somewhat amusing. Mr. Urwick, more anxious for lucre than for glory, proposed that the Society should make a few honest pennies by accepting advertisements for the calendar. Mr. Baynes seconded, and Mr. Mackay supported the suggestion by pointing out that Glasgow University had set an example in that direction. Mr. Williams and Mr. Brown, however, sat on the monstrous proposal with such vehemence that its author was fain to withdraw it.

REVIEWS

CHINESE MEDICINES.*

We have received from Dr. Soubeiran an early impression of an elaborate and interesting medical work, which he has just brought out, the importance of which will be best understood by an allusion to the report of the Academy of Medicine prefixed to it, and upon whose recommendation the work has been published at the expense of the French Government. The report of the Academy of Medicine states that the MSS. preliminarily submitted to them excited their attention not only from the nature of the subject treated of, but because Dr. Soubeiran is favourably known by his scientific labours, and bears a name dear to science from the writings and discoveries of his father.

The authors have combined their labours, in order to make better known the therapeutic agents, and indirectly the medical ideas of a people who have remained stationary in this respect, although advanced above others in science, industry, and the arts. It is not the first time that this subject has been broached, thanks to the zealous labours of medical men and naturalists. In this special class of literature, among others who have contributed of late years much useful information, are Messrs. Tatarinov, Porter-Smith, O. Debeaux, and especially Daniel Hanbury. But useful as these contributions have been, they were only, after all, essays more or less advanced and successful, owing to the special difficulties inherent to this class of investigations.

The difficulty of identifying the medicinal substances used in China has arisen from their being so much mixed and altered in appearance by successive decoctions in different liquids, or reduced, if not into powder, at least into such small fragments, that they were scarcely recognisable. The scientific determination of these various therapeutic agents would have been impossible, unless they had availed themselves of the labours of their predecessors, and added the special knowledge locally acquired by one of them in a long residence in China. One is struck, in scanning this work, by its similarity to early European works of this class; for all the principal medicinal substances used by us seem to be known and employed by the Chinese, and one might almost fancy he had before him the Materia Medica of Geoffrey, or one of the olden treatises in which early scientific research, not sure of its facts, does not disdain to collect and publish, conjoined with its own observations and prejudices, the medical errors and popular superstitions of the time. But with all the follies and superstitious opinions held of the virtues of many substances, their practitioners have evidently a thorough knowledge of the uses of some of the most important natural and artificial medicines. They use all the common mineral and vegetable astringents and febrifuges. From time immemorial they have used mercurial preparations in syphilis, arsenic for strumous afflictions and intermittent fevers; iron, as a strengthener; nitrate of soda, as a diuretic; carbonate of lime, as an absorbent, etc.

They use, as we do, sulphur, acetate of copper, castor oil, aloes, rhubarb, aconite, veratrum, colchicum, camphor, musk, and opium. They have stimulatories, anthelmintics, and others analogous to ours, and are in possession of substances capable of preventing or removing the effects of intoxication, among which are named *Betonica officinalis*, *Novenia dulcis*, *Chrysanthemum album*, nutmegs, and borax. What is more remarkable, anæsthesia, general or local, is of very ancient employment in China. One of their great surgeons describes a species of Atropa, which produces insensibility sufficient to allow of serious operations being performed on the lower part of the stomach. There are some plants, of boasted reputation in the extreme East, which at least deserve being put to the test by experiments on animals, and a severe clinical examination. Among these are *Anemarrhena asphodeloides*, employed for the same use as squills; *Pardanthus chinensis*, to which are attributed most remarkable and varied properties; *Pupalia geniculata*, the bitter root of which is used in cases of rheumatism; *Passerina chamædaphne*, a tincture of which is employed as a soothing tonic and febrifuge; *Rehmannia chinensis*, useful in cases of general debility; *Dimorphantus edulis*, frequently prescribed in cases of loss of blood, heart disease, etc.; *Gynocardia odorata*, the seeds of which are used in skin disease and for syphilis. Among febrifuges, *Tournefortia argusina*, *Tricosanthes dioica*, and especially *Dichroa febrifuga*, which has a high reputation in Cochin China, and merits, perhaps more than the others, the title of a substitute for quinine.

In running over the articles used medicinally by the Chinese, there appear to be 110 derived from the mineral kingdom, which are alleged to have useful properties; 89 from the animal kingdom; and 676 from the vegetable kingdom. Space would fail us to go into full elaborate enumeration of the specialties which are new in the vegetable kingdom.

Some of the animal medicines are curious. For instance, torrefied human hair is administered in pills. The urine of women and children is considered to heal abscesses and absorb tumours. The urine of young infants is collected, and after adding sulphate of lime, or common salt, evaporated into crystalline cakes, which are given in cases of debility, gonorrhœa, affections of the kidneys, etc. After confinement the urine of a child of four years is adminitered to the woman, with the view of aiding nature to expel the impurities accumulated during pregnancy. The excrement of the bat has a high therapeutic reputation, and is applied to ulcers, and administered in cases of ophthalmia. The paws of the bear and its gall are much esteemed, being considered anthelmintic, and useful in affections of the liver and abdomen. The scales of the pangolin (*Manis javanica*) are considered remedies against the itch, and in cases of ulcers, buboes, and hæmorrhoids. The itch is very common in China, and the scales, fixed in a bamboo handle, are used for scratching. Castoreum is employed in the form of pills or tincture, in nervous affections and weakness of the genital organs. But the kidneys of an old dog are sometimes substituted for castor. The excrements of almost all animals torrefied, such as those of the camel, goat, bat, etc., appear to be used medicinally.

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* "La Matière Medicale chez les Chinois." Par M. le Docteur J. Leon Soubeiran, Professeur Agrégé a L'Ecole de Pharmacie, et M. Dabry de Thiersant, Consul de France en Chine. Paris: G. Maison. Pp. 320.

The deer, of which several species are found in China, occupies an important place in their Materia Medica, the flesh, blood, horns, nerves, and marrow being all used. The young budding horns, especially those taken at the last quarter of the moon, when they are still soft, and filled with blood, are considered a sovereign remedy in poverty of the blood, and are especially recommended to those of sedentary occupation, and convalescents. They are also administered to women subject to miscarriages. The high price which these fetch cause an active chase to be carried on, to obtain them in Formosa, Sse-tchuen, Chen-si, Chanson, Pe-tchi-li, and other districts. One of the species of deer is *Elaphurus davidianus*, of Milue Edwards. These young horns, according to Huc, sell for as much as 150 ounces of silver. They are prepared with the vapour of spirit, and certain aromatic herbs. A species of skunk is used in medicine, in cases of suppression of urine, gravel, and hæmorrhage. A curious use of the gecko is as a test of virginity. It suffices to place on the hollow of the hand of the female suspected a little of its blood, and then to plunge the hand in water; if the blood falls off it is a certain sign that the girl is not a virgin! The flesh and skin of various snakes are used medicinally, but the head and tail are removed, under the impression that poison is lodged in these. Various virtues are attributed to serpents; they are considered efficacious against rheumatism, leprosy, paralysis, ulcers, ophthalmia, and fevers. Several frogs and toads are also employed. The hippocampus has the reputation of aiding accouchements; it suffices to hold one of these little horse-fish in the hand to cause the expulsion of the fœtus.

A number of both marine and river shells are calcined and pounded, and used in cases of fever, apoplexy, and hæmorrhage. Cuttle-fish bone is considered styptic and anthelmintic. Pulverized, it is a domestic remedy for stopping the blood in cuts or wounds.

Mylabris ciohorii is collected and dried, and employed as an emetic, diuretic, and antidote to poison, and also to promote abortion. But its most vaunted use is as a remedy for hydrophobia. Although it contains a third more cantharidine than the ordinary blistering fly, it does not seem to be used in China for vesicating purposes.

The silkworm and its products seem to enjoy a high repute, for the dead moth is used medicinally as an aphrodisiac and antileucorrhic. The caterpillar, torrefied, is administered in inflammation of the throat. The chrysalis, the cocoons, and the excrements of the worm are also employed. Raw silk is specified in some cases, and an empyreumatic oil of silk was formerly used.

The larva of the grasshopper, roasted, is pulverized, and made into pills, which are given to children in fevers, and if troubled with worms. The bodies of the grasshopper, stripped of their feet and wings, are sold in large quantities in autumn to the druggists by the peasants. They are employed in cases of sterility, impotence, menstrual disorders, lumbago, etc. Mixed with olibanum, arsenic, sal ammoniac, and rice flour, they are applied to strumous abscesses; and have also a high reputation in cases of hydrophobia.

The larva of the common meat fly (*Musca carnaria*) are collected from putrid carcases, roasted, and employed as medicine, being given to consumptive or scrofulous children. The *Scolopondre morsitans* is employed as an anthelmintic They are collected about the houses, dried, and mixed with rice spirit, and are said to be an infallible remedy for worms. The European scorpion, when roasted, is employed in apoplexy and tumours of the stomach, etc. It enters into the composition of a celebrated tincture, which is considered useful in all sorts of maladies, even the most dangerous.

Finally, we may state that the work has an added interest, from a good Chinese and French vocabulary appended, which will be found very useful for reference; and there is also a well-arranged classified table of contents.

PROCTOR'S PRACTICAL PHARMACY.

Third Notice.

In our last remarks on Mr. Proctor's work we referred to his treatise on ointments.

The Unguentum Hydrarg. Nitratis has been invested with difficulties which we have not experienced. The quantity of acid ordered by the Pharmacopœia is that which has long been adopted by operative chemists, the result in appearance from the use of either nitrous or nitric acids is identical. The secret of preservation consists in letting it stand for a day, remelting and running it off into moulds of about four ounces each. In the second melting it should not be more fluid than thick cream, if not perfectly prepared at the onset the addition of one drachm of nitric acid will be advantageous—remarkably little stirring is requisite during either stage. A very sensible precaution is mentioned in the case of Emplast. Cantharidis. "Care must be taken, however, not to make the plaster more adhesive than enough, as it would give much pain to remove an adhesive plaster from a blistered surface," p. 212.

It would be transgressing the limits of a review to enter on a survey of the complex processes which the Pharmacopœia contains. Whether the details of their manipulation be carried out or not, their study is of the last importance to the pharmacist. Their manufacture cannot be conducted on a small scale; and, moreover, in their production there are a hundred minutiæ suggested by daily work—specially modes of economy in reference to time, money, and material, that infallibly place the wholesale manufacturer at an advantage over the most skilful theorist. Books are the apprentice, the hand, the master. An untutored laboratory man will often distance the professor; while commercial experience is of equal value with abstract chemistry. When both are united the result may be safely prophesied.

With less hesitation, therefore, we commend to the student the description of tartaric and tannic acids, quinine, morphia; the resins of jalap, scammony, and podophyllum; and proceed at once to some considerations involved in the mystery of dispensing.

Eventful is the morning when the apprentice first finds himself surrounded by the materials of his occupation: a new world is before him, let him enter with hope, confidence, and cheerfulness, on his career. Let him be pursuaded first of the importance of his avocations, nor let him be discouraged by its infinite small observancies. Let him know that success *must* crown industry, and that knowledge is the key that must unlock the gate of competence. Good habits are essential always, but here most; order is not only heaven's first law, but the speciality of the druggist; a dirty counter is the indication of a poor spirit. The pharmacist is a master-builder, whose soul must be in the handle of his trowel.

We cannot discuss the subject of labelling and weighing—nothing respecting which or similar operations is neglected by Mr. Proctor, and wisely so; for we have seen with our own eyes powdered opium *dibbed out* with a spatula into supposed doses from a wide-mouth bottle, and scales produced that should have been invisible to mortal eye.

We are glad to note the decided stand made in favour of distilled water; we learn from unquestionable authority that its use is by no means constant, let us then state that it is our belief that surburban pharmacists lose more of the confidence of their customers by the resulting difference of appearance in lotions and mixtures than by any other cause whatever. The *medicinal* value of either is not a point in question. So important is the matter that we quote Mr. Proctor's paragraph in full, adding in justice to ourselves that illustrations sufficient for an essay could be furnished.

"Distilled water should be used as a regular habit; there are many cases in which it makes no important difference in the medicinal value of the mixture, but on which it still makes a difference in the appearance, and we must remember that the appearance will sometimes have a great influence on the patient, and it is well when our work is called in question to be able to show that our practices will bear the strictest investigation.

"Infusions and sundry other clear preparations made with distilled water, will give no precipitate with alkaline carbonates; but if hard water were used, carbonate of lime would be deposited, and the patient getting his mixture clear at one place, and turbid at another, would naturally suspect that the latter was carelessly made, or of inferior materials. I have here three (?) mixtures illustrating this point.

℞ Sodæ bicarb., ʒss.
Aq. ℥iv. M.

"This being made with hard water is turbid; had it been made with distilled water, it would have been bright. If the patient were to show me the prescription, and ask the question, I could not deny that the preparation was at fault. Take another

℞ Liq. arsenicalis, ʒj.
Liq. potassæ, ʒss.
Aquæ, ad. ℥iv. M.

"In this case I have two mixtures, one made with Aq. Font., and the other with Aq. Dest. You observe the latter is quite bright, but the former contains a dirty pink sediment, which the patient will say is the arsenic not properly dissolved." Take a third, p. 249.

℞ Liq. plumbi diacet. dil., ʒij.
Aq., ad. ℥vi. M.

These remarks do not apply to Scotland, where the purity of Loch Katrine water renders further purification unnecessary. Doubtful prescriptions where dose, ingredient, or chemical change are concerned, require incessant watching —instances are too numerous to mention, and they should be noted whenever they occur. A master or assistant is extremely foolish should he hesitate to consult his companions. A remarkable and instructive instance will be found on page 275. No. 32.

℞ Hydr. chlor., gr. xx.
Tinct. hyoscy., ʒj.
Aquæ, ʒix. M.
Draught to be taken at bedtime. November 9, 1872.

The dose, solubility, and intention of the medicine, show that neither calomel nor corrosive sublimate were prescribed, but that chloral hydrate was a fact of which the writing of the formula gave no indication.

Occasionally our medical inferences are at fault. There was once an irascible old colonel who was in the habit of prescribing for himself. He ordered a fair dose of rhubarb, ginger, and magnesia to be prepared in the form of pills. Made with the greatest care a bolus was the result, three of which were to be taken at night. The conscientious assistant dispensed them not wisely but too well, for wishing to be entirely safe he sent them out labelled "Pills for the dog." There was thunder in the atmosphere next morning. We pass from the dangerous contraction Acid Hydroc.—which may mean Scheele's or hydrochloric—and Tinct. Mel. Vesicatoriæ, which is Tinct. Lyttæ, Melœ Vesicatoria of Linnæus, and say one word about emulsions. Here we are compelled to differ from Mr. Proctor, nor can we accept the directions bearing on oil and balsam copaiba thus given. "The mixture is most perfectly effected when the oil and water are present in about equal bulks. The best mode of operating is to put the gum and water or mucilage into a mortar, and add the oil or balsam by degrees, with brisk stirring; if the mixture becomes thick with the addition of the oil, water should also be added before more oil, so as to maintain the emulsion during its formation of about the consistence of a thin cream." Again, "An emulsion may be made with less trouble, though not quite so perfectly, by putting the oil or balsam into the bottle with powdered gum, shaking them together till mixed, which takes place very readily, then adding about double the bulk of water, and shaking briskly." P. 252.

Suppose, instead, we take a dry bottle and pour in all the mucilage, rotate it so as to coat or smear the whole interior; pour in the balsam and give it a dexterous shake, the bottle previously being corked, add the water with the usual caution, and the tinctures last; a permanent emulsion is produced. The Ol. Santalin Flav. treated in this way leaves nothing to be desired. One drachm of mucilage appears to emulsify half a drachm of liquid extract of male fern by rubbing in a mortar; but if shaken in a bottle one drachm of water must be added first. The remaining illustrations of emulsions and mixtures which are analogous will well repay perusal. Emulsions are the *ne plus ultra* of dispensing difficulty, and we are grateful for the slightest light upon the subject.

We are under the impression that Mr. Barnard Proctor is the first English pharmacist who has introduced the systematic study of autograph prescriptions. The plan adopted is to place thirty-two plates of lithographed facsimile before the student's eye, the peculiar handwriting of the prescriber being faithfully preserved down to the very blots and erasures on the manuscript. We give this section of the manual unstinted praise, and bear willing testimony to the complete success of the attempt. There are distinguished pharmacists we know who object, on principle, to all copied autographs, and place them on a par with botanical researches based on the study of wax flowers; personally, we dislike them also, but it would be knight-erranty not to acknowledge their extreme use in compendiums designed to instruct in practical pharmacy.

It is no secret that a much more extended series has long been in contemplation, but its accomplishment has remained hitherto amongst the thoughts that perish. It was proposed that an eminent London firm should issue, with the lithographic skill for which they are famous, two hundred autograph formulæ thus arranged. One hundred to include specimens of celebrated practitioners, with short comments —posological, technical, and scholastic—thirty should be shared between France, Germany, and America, fifty (not less) should be examples of such prescriptions as are met with in the daily practice of dispensing, while twenty should form a short exposition of unusual doses or combinations, and embody those Mr. Proctor terms doubtful prescriptions. Thus we have the bold legible formulæ of Dr. Paris in contrast with the hieroglyphics of Dr. Roots or Dr. Williams, the round-text of Dr. Bright and the contracted directions of Dr. Hastings; the trembling letters of Sir Benjamin Brodie, and the dashing lines of Dr. Seymour. Anxiety might be awakened by Mr. Pennington or Golding Bird, but hope would be restored by Dr. Radcliffe.

Mr. Proctor is unaware of the special embarrassments of London dispensers when he writes the following sentence, which we would ask him to modify in a second edition:— "My selection does not contain the most difficult prescriptions which I have met with, which have usually been German, and would have proved less instructive and less practically useful than those which are simpler in their nature, and being indigenous to our soil, will more fairly represent what every dispenser may expect to meet with and should be prepared to read," p. 257. Writing within a radius from St. Paul's Cathedral, we are justified in objecting to this decision; one of our chief difficulties consists in deciphering those foreign *ordonannces* which are so frequently presented to our notice. Perhaps none are more usual or more perplexing than the recipes of Dr. Soest, whose formula for black draught, beginning with "Mannæ Calabrin" (sine stipitibus), should find a place in every chapter on autographs.

In the disputed formula No. 15, we are inclined to read—

℞ Pulv. doveri, gr. vj.
Bismuth, gr. iv. Mitte vj.
Ft. pulv. o. n.

because we have so dispensed it twice for the same person without remark. In No. 13, we imagine liquor arsenicalis to be correct. Zinci bon. we have met with before. In No. 15 (already mentioned), we hardly think the symbol for one grain would equally represent ℈j., for it is not uncommon, and is only a bad way of writing the same sign in No. 11.

The French gr. for either grain or gramme, is more obscure. Those curious in manuscript may amuse themselves with No. 19. The directions are:—Capiat cochl. ij. mane, post pilulas (not cochl.). The extra stroke making the directions look like iij., comes from the first dot in ℥vij., which is smudged in consequence. The lower stroke making them look like iv., comes from the "r" in carb. The two extra dots after vin. ipecac. come from the two dots below after ʒij., proving how well the lithographer has done his work.

In the same prescription one ingredient is twice mentioned thus—

℞ Magnes. carb.
Sodæ carb.
Magnes carb. āā ʒj.
Aquæ ℥viiss.
Vin. ipecac., ʒj.
Tinct. zingib., ʒij. M.

Here, without hesitation, we dispense *Potassæ* carb. on the principle of aut Erasmus aut Diabolus. To exhibit the Evil One would be injudicious, and we are morally certain the Divine was the one alternative.

We suppose that on page 272 the conclusion of the formula (27) has been accidentally omitted, noticeable because there are so few errata in the volume; but we object to sapo vice sapon being made the contraction for saponis, and we think that "if" more frequently governs the subjunctive than Mr. Proctor is willing to permit.

Never let it fade from the recollection of our students, or be held by them as a minor doctrine, that the one true method of understanding Latin prescriptions, autograph or otherwise, is a well grounded acquirement of the Latin language. Without this the best instructions are subsidiary, laborious, and unsatisfactory. While there are few among our ranks (their curriculum being finished) who could not read a recipe so as to ensure accurate dispensing, there are fewer still who are capable of reading the directions of the physician in full, correct latinity. Trade dexterity is not the ultimate accomplishment, and we would stimulate our younger brethren to higher effort. As in organic chemistry the solitary Newcastle auditor must know the properties of sulphur before he ventured on the consideration of sulphurous and sulphuric acids, so he who would be familiar with the variations of a foreign tongue must know the principles on which they hang. Practice will give the rest, use will create facility, and study will make the rough places smooth. Meanwhile the tyro can be presented with no better guide than the author of these lectures on practical pharmacy.

Nothing remains but to gather up the fragments. We decline to enter on the directions for dispensing pills; they are elaborate and useful. The pill is compared to the structure of the human body: "The fibrous powder represents the bones; gum or extractive matter stands in the place of the muscular element; and the moisture, without which gum is not adhesive, represents the blood." On this theory we suppose that silver-leaf may be regarded as the chest-protector.

Some formulæ are good.

1.

℞ Creosote, gtt. xxiv. Ft. pil. xij., with
P. amygdal., gr. xxx.
Glycerin, gtt. xij.

2.

℞ Camphor, ʒj. Ft. pil. xij., with
Ol. ricini, gtt. iv.
P. sapon., gr. ij.

Rub the camphor to a powder with the oil, and work into a mass with the addition of the soap.

3.

℞ Ol. lastreæ filicis maris, gtt. xvj.
Sapon. venet, gr. viij.
P. amyli q.s., ut fiat pilul., No x. Sumat pil. mane.

Calcined magnesia seems to be the best excipient for balsam of copaiva and chio turpentine; treacle, for iron compounds, and syrup. aurantii for Pil. Rhei Comp.

4.

℞ Acid carbolic, gr. iij.
Ft. pil., j. Mitte xlviij.

"144 grains of purest carbolic acid and 24 grains of yellow wax were melted together in a test tube, poured into a cold mortar, and rubbed into a rather adhesive powder; soft soap was then added by small degrees till 8 grains had been added, when it was found that the whole could be worked into a mass and divided into pills." P. 290.

With regard to powders, we should have liked a note on the Œleosacchara, which are made by the simple addition of an essential oil to a definite quantity of sugar. The term has occasionally mystified an English pharmacist. With regard to ointments, we are glad to find discredit cast on the stupid practice of using paper covers, which results uniquely in additional messiness. A covered pot is more cleanly, and should be allowed to be what its name designates. Ointments, with a large proportion of liquid, are sometimes cleverly made by using an equivalent amount of powder, as (p. 298) in the case of Liquor Plumbi. Often an easy expedient is sufficient. Place the fatty substance on a slab, pour the liquid on the centre, adding either at once or by degrees, and stir gently in a circular manner; an incredible amount of fluid may thus be introduced. For plasters we have no sympathy. We thank Messrs. Rigollot, the Sinapine Tissue and wholesale firms, for past assistance; and the time may come when the druggist-sundrymen will curtail the handle of the gas spatula, and give it a more convenient shape. Waiting for that desirable event we have but space left to note the presence of the commentary on the Qualitative and Quantitative Testing of the Pharmacopœia; the concluding studies chronicling rather tentative experiments than pharmaceutical results, offer too wide a field on which to enter.

In them we are presented with a lucid and straightforward recital of how to use these materials to the most advantage, and how to put out our capabilities at the highest rate of interest. These pages not only teach us to learn and labour truly to get our own living, but the circumstances of their production are a standing witness that neither the pressure of business, nor the rigid discharge of daily duties, are incompatible with the culture of a scholar and a gentleman.

"The perfection of a circle depends not on its size, but on its completeness;" and if Mr. Proctor has dealt with the humble materials of every-day work, he has dealt with them in such a manner as to exalt that work to the dignity of a science.

Literary Notes.

A BOOK of an extremely practical character has just been published by Messrs. Churchill, for Messrs. Fraser and Green, of Glasgow. It is called the "Druggists' Stock and Price Book," and contains a classified and alphabetical list of every article kept in stock by the firm we have named. Such a list, we imagine, would comprise very nearly the stock of all other chemists. But in the case of inevitable local and special additions there is abundant room for insertions between the lines. In an explanatory note Messrs. Fraser and Green indicate the use which they themselves intend to make of the book, and consequently which others may follow, if it seemeth good unto them. In the first place the prices of all invoiced goods will be posted into one of the books as the invoices come in. Another book will contain the retail prices, and as Messrs. Fraser and Green have three establishments this plan will be very useful, in enabling them to maintain uniformity in their charges. A third copy will be employed for stock taking once a year, and then will come in the special advantage of copy No. I., which will show on corresponding pages and lines the actual cost prices of all goods in stock. It is not absolutely necessary to employ books in this lavish manner, as the work is sufficiently ruled to enable a neat writer to take advantage of all the conveniences in a single copy. A great part of the labour of the compilation has consisted in giving the various names by which one substance is often known, as for example, "Rochelle Salts," and yet referring from all but one to the most correct definition. This seems to have been most carefully accomplished. To take the instance already named, we find "Rochelle Salts," "Sal Rochelle," "Sodæ Potassio-tartras," and "Soda Tartarata," to which last all the rest refer. The book contains not only Materia Medica, but also sundries and proprietary articles. We think many chemists, both in a large and small way of business, will thank Messrs. Fraser and Green for sharing with them the convenience resulting from their labour.

Dr. Ruddock has just brought out the second edition of a neat little volume, "On Consumption and Tuberculosis of the Lungs," a work intended rather for the general public than for the profession. Whether pathology and physiology are desirable objects of general study is a point we shall not attempt to discuss in this place; but we may express our belief that a more extended education in hygienic laws would help to increase the health and stamina of the country. This seems to be mainly Dr. Ruddock's idea, and certainly he has given in a small space a fair statement of the conditions, character, and hygienic treatment of consumption. We must, however, take exception to his chapter on "The Physiology of the Lungs," which is so condensed as to be actually misleading. His summary of the process of respiration is that "the blood has carbonic acid, and wants oxygen; the atmosphere has oxygen, and wants carbonic acid; and so a constant interchange takes place." Unless we knew otherwise we should never guess from this what becomes of the oxygen, or how the carbonic acid is generated.

A little shilling book, on "Economical Cookery," by Lady Style (Longmans), has reached us, and seems to contain many things, but not much economical cookery. There are some doggrel rhymes, a number of violent attacks on servants generally, and cooks in particular, and an article on sons and daughters, and matrimony. Then we have a number of Turkish recipes, and when it is thought desirable to introduce "Elmek Kadiyifi" and "Zubdayi Krutkyari' to our family feasts, Lady Style's book will come in useful.

The September number of the Chicago *Pharmacist* contains a long article entitled "Parasites Disguised as Authors," by George F. Deckman, which for plain, or rather for rough, speaking, has seldom been approached in any journal connected with pharmacy. The specially offending "parasite" is thus introduced:—

"As the grand sachem among loud-mouthed and brazen-browed impostors, scientific frauds, and literary sharks, J. L. A. Creuse, Brooklyn, New York, carries off the palm, like a tornado. An advertising leaflet, now extinct, once had a precarious and inglorious existence under Creuse's pharmaceutically editorial supervision, although it was owned and published quarterly by Reed, Carnrick, and Andrus, New York, nostrum compounders on the large scale."

Mr. Creuse, it seems, has of late been scribbling a good bit in many of the pharmaceutical journals, and the object of this article is to show that his ideas are, to put it mildly, borrowed, and that his reported experiments are mere myths.

"As a literary kleptomaniac," says Mr. Deckman, "Creuse has arrived at the incurable stage. His undaunted presumption is without a rival, and as to downright ignorance he stands unapproached. Yet these peculiarities he owes more to national traits than to educational faults; or, in other words, he was well brought up in a very poor school."

This manner of compliment is continued through some twenty pages, and the writer certainly picks out a number of amusing instances of Mr. Creuse's peculiar style. We take a short specimen of this lively criticism:—

"But, *venir au fait*, Creuse affirms 'that the best method, undoubtedly, for preparing the ferric sulphates *perfectly pure*, is to pass chlorine through the dissolved ferrous sulphate, previously properly acidulated with the necessary sulphuric acid. But this is obviously impracticable to' such a progressive *Pharmacien par excellence*. Creuse undoubtedly believes that passing chlorine through the solution means to run it in at one end and out at the other, similar to an electric current, for that would be Creuse out and out. That the chlorine enters into combination with the abstracted hydrogen, forming free hydrochloric acid, has never penetrated through his dense occipito-frontalis. He had never pictured to himself that the reaction is thus:

$$6(FeO.SO_3)+3(SO_3.HO)+3Cl=3(Fe_2O_3.3SO_3)+3HCl.$$

Or, taking ferrous sulphate without additional acid, thus:

$$6(FeO.SO_3)+3Cl=Fe_2Cl3+2(Fe_2O_3.3SO_3).$$

"Another marvellous discovery is that the gases arising during the officinal operation are poisonous; this is, assuredly, a valuable conquest for medico-legal advancement. Hereafter nitrogen tetroxide is poisonous—Creuse has decreed it!"

LEGAL & MAGISTERIAL.

STUBBS *v.* FOOTTIT.—INTERESTING TO CHEMISTS.

The plaintiffs, Messrs. Stubbs and Co., of the Mercantile Association, sued the defendant, Mr. Chas. Foottit, chemist, of Great Marlow, at the Guildhall County Court, London, on Friday, September the 5th, for the sum of 20s., his subscription in advance. From the evidence of Mr. Foottit it appeared he subscribed and employed the plaintiffs to collect his debts; but finding the terms of their prospectus were not adhered to, he refused to continue his subscription, and pleaded that as the plaintiffs had not given him satisfaction nor fulfilled their contract, he was not bound to pay a future subscription.

Messrs. Stubb's representative said Mr. Foottit had received all the information when he made application to join, and had been supplied with forms and the circular.

Mr. Foottit contended that his order was given in the country; he had not troubled to send back the circulars. He employed the plaintiffs, thinking it would be an easy way to collect debts, but he found it was not easy at all.

The Judge said he thought it generally to be a most uneasy way.

The Registrar said no cause for action could lie at that Court.

Mr. Foottit applied for expenses, having come from Great Marlow at some inconvenience on purpose to defend the action. He was allowed 20s.

ASSAULT.

At the Stoke Police Court, on October 3rd, James Dolby was charged with assaulting Thomas Walklate, chemist, of Stoke, for whom Mr. Welch appeared. Mr. Walklate went to the defendant's house at Longton to ask about the settlement of an account of £4 14s., when he was rudely told to leave the house, and received a violent blow under the ear. The assault was denied, but the magistrates, considering the case proved, imposed a penalty of 40s. and 15s. costs.

Correspondence.

THE VIENNA MEDALS.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

Sir,—Having devoted a great deal of time and attention to the Exhibition at Vienna, and having remained there from the opening to the beginning of July, I was not a little surprised to find the official announcement of the awards contained in the *London Gazette* of 26th August, prefaced by the following extraordinary paragraph:—

"At the meeting of presidents, held on the 2nd July, 1873, it was resolved, 'that the Medals for Progress, Medals for Merit, Medals for Fine Arts, and Medals for Good Taste, are *perfectly equal in rank and value*.'"

Now, I must begin by stating that I do not know any of the presidents above mentioned—even by name, and I therefore mean nothing personal; but I maintain that such an arbitrary decision is *absurd, unjust, and illegal.*

It is *absurd* because if all medals were to be equal in rank and value, what was the use of having three distinct medals for industry, and why not adopt from the beginning a uniform medal, as was done in London (with the exception of council medals, corresponding to the Vienna Diplomas of Honour) at the Exhibitions of 1851 and 1862.

It is *unjust*, because, as regards jurors, it sets at naught the decisions of seven or eight hundred distinguished men from all countries, who were engaged for a whole month in the arduous task of examining and classifying the different degrees of merit; and as regards exhibitors, it places on the same level those who have really caused their industry to progress, and those who have been satisfied to tread the beaten path.

And lastly, it is *illegal*, because in all the papers issued to intending exhibitors, it was clearly stated that there would be three classes of medals—1. Progress; 2. Merit; 3. Good Taste—and it was on that understanding that exhibitors went to the trouble and expense of competing for these rewards. What right, I ask, had the presidents of the juries to alter the *original contract?* They certainly had the power to control and alter, if they thought fit, the decisions of the jury, but that only extended to raising or lowering any particular award—certainly not to swamping the whole system.

I am aware, being personally acquainted with several jurors in various groups, that there were some fierce struggles as to who should have the No. 1, 2, or 3; but that is in my opinion the very reason why the opinion of the majority should have been respected, and should not have been upset by an autocratic decree, for which no precedent could be found in the annals of any exhibition.

I remain, Sir, your obedient servant,

London, Sept. 30, 1873. EUGENE RIMMEL.

P.S.—I may add that my attention was only drawn lately to that paragraph in the *Gazette*, otherwise I should have addressed you sooner.

GAZETTE.

DISSOLUTION OF PARTNERSHIPS.

Bramwell and **Henderson**, Heworth Chemical Works, and Mosley-street, Newcastle, chemical manufacturers. Aug. 30

Brown, W. B. and J. B., Ascot, Berks, surgeons. Aug. 1. Debts by William B. Brown.

Howard and **Tatterson**, Leeds, chemists. Sept. 8.

Pike, T., Weyhill, M.D., and F. J. **Hammond**, Fyfield, surgeon. Sept. 22. Debts by Thelwell Pike.

Prendergast, **Oates** and Co., 160, Goswell-road, sauce and baking-powder manufacturers and drysalters. July 25.

Stevens and **Lawson**, Prince of Wales-road, Haverstock-hill, surgeons. Aug. 21. Debts by Alfred Stevens.

DIVIDENDS DECLARED.

Hughes, **Hubert** (Bkt.), Bridgnorth, chemist 1st and final div. 2d.; J. T. Carrane, at W. M. Taylor's, Wellington, solicitor.

Kitchins, **Charles** V. (Liq.), Weston-super-Mare, surgeon. Div. 2s.; R. Chapman, Weston-super-mare.

Meears, **Job William** (Bkt.), Croydon, chemist. Final div. 11s. 2d. and 20s. to new proofs, with interest at 4 per cent.; P. Paget, Bankruptcy Court, Basinghall-street.

Mitchinson, **Charles** C. (Liq.), Lee, Kent, surgeon. 1st div. 1s. 8d.; O. Omanney, 41, Norfolk-street, Strand, London

Nock, **James** (Liq.), Cradley Heath, near Brierley Hill, chemist and grocer. Sept. 29, between 10 and 5. Div. of 3s.; D. Shaw, Pierpoint-street, Worcester.

Pickering, **Joseph**, and **John Joshua Carryer** (Bkt.), Suffolk-street, Mile-end, chemists. 1st div. 2s. 2½d.; P. Paget, Bankruptcy Court, Basinghall-street.

BANKRUPT DISCHARGED.

Willmot, **John Peter**, Plymouth, chemist. (The property has been realised, but from the insufficiency of the assets no dividend has been declared.) Bankruptcy closed Sept. 11.

LIQUIDATIONS BY ARRANGEMENT OR COMPOSITION.

Notices of first meetings have been issued *in re* the following estates. The date is that of the petition:—

Anderson, **William**, jun., Pleasant-row, Newcastle, surgeon. Sept. 27.

Burley, **Thomas**, trading as S. and T. Burley, Fleet-street, Liverpool, drysalter. Sept. 17.

De Baddley, **Charles**, 24, Brixton-road, herbalist. Sept. 11.

Garnham, **Devereux John**, Lincoln, surgeon. Sept. 17.

Hollings, **Edmund**, Kirkstall-road and Metcalfe-street, Leeds, druggist. Sept. 25.

Jones, **Elias Richard**, Slater-street, late Paxton-street, both Barrow-in-Furness, chemist. Sept. 23.

Leveaux, **Isidore**, trading as Isidoro Leveaux and Co., and the Standard Measure Wine Co., 18, Bury-street, St. Mary Axe, wine merchant. Sept. 11.

Mullar, **Frederick George William**, 52, Oxford-road, Kilburn-park, doctor. Sept. 13.

Swaine, **Charles Henry**, 225, Somers-road, Southsea, chemist. Sept. 12

Thompson, **George**, Burscough, near Ormskirk, manufacturing chemist. Oct. 4.

Towle, **Edward Thomas**, 25, Lister-gate, Nottingham, chemist. Sept. 16.

SCOTCH SEQUESTRATIONS.

Matheson, **Lachlan Martin**, Kiltaraglen-cottage, near Portree, Isle of Skye, surgeon.

Smith, **George Stevenson**, 24, Northumberland-street, Edinburgh, surgeon.

TRADE REPORT.

In our tight little island we are getting more and more into the condition sighed for by Dr. Watts, of having peace at home, no matter what brawls may disturb the street. Fortunately this seems to some extent true financially as well as politically. The very serious crisis which the failure of Jay Cooke and Co. brought about in America, was felt in London very much less than all authorities anticipated. The consequence of the crisis there has been, and will yet be, a considerable diminution of United States orders, but those who are in a position to judge, say that the feeling is very good, and it must be admitted that this affair has shown the healthiness of the present state of commerce by the rapidity of its healing, rather than indicated any alarming symptoms. The panic may be said to have been brought about by an accident rather than by a disease.

Heavy chemicals are very quiet. Soda crystals are now quoted at 115s., which can hardly be a remunerative figure at the present price of coals. Bleaching powder is now 11s. and no buyers at that. Citric acid is held for 4s. 6d., but no one gives it, and 4s. 5d. is the correct quotation, according to the tone of the market. Tartaric, too, is dull at former quotations. Mercury has been raised to £16, and it is anticipated in the market that another sovereign may soon be added to the demand. Mercurials have of course followed suit. The most important business has occurred in quinine. Some large orders for India, stipulating expressly for French manufacture, have made that brand very scarce, and it therefore happens that at this moment Pelletier's make is dearer than Howard's, an event which perhaps has never occurred before. The English Government, too, has been a large customer for quinine of late for the Ashantee expedition, and it is likely that until that miserable war shall have been cleared away the price of quinine will remain high.

There is but little to report from the drug markets. The price of opium continues at about its former rates, but from reasons we have already given, it must be worth buying. Lemon and Bergamot are said to be dearer in Italy, and will probably advance here before long. Fine rhubarbs and sennas are much wanted, and would command good prices. The market is inundated with inferior samples, which sell at merely nominal prices. Shellacs have advanced, and do not yet correspond to the prices reported from India. Some asbestos was put up at the recent drug sales, and bought in at 4d.

Olive oils have established a further slight rise since we last wrote. At present the quotations are stationary but firm. Rape and linseed oils are lower, and the market is dull in each case. Turpentine has an upward tendency. Petroleum is unchanged.

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mincing-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.

	1873.					1872.				
ACIDS—	s.	d.		s.	d.	s.	d.		s.	d.
Acetic per lb.	0	4	to	0	0	0	4½	to	0	0
Citric ,,	4	5	..	0	0	4	5	..	4	6
Hydrochlor. per cwt	4	0	..	7	0	4	0	..	7	0
Nitric per lb.	0	5	..	0	5½	0	5	..	0	5½
Oxalic ,,	0	8	..	0	0	1	0	..	1	0½
Sulphuric ,,	0	0¾	..	0	1	0	0¾	..	0	1
Tartaric crystal .. ,,	1	7	..	1	7½	1	7	..	1	8
powdered ,,	1	7¼	..	1	7½	1	7	..	0	0
Antimony ore per ton	240	0	..	260	0	270	0	..	290	0
crude .. per cwt	40	0	..	42	0	38	0	..	40	0
regulus.. ,,	0	0	..	0	0	0	0	..	0	0
star ,,	57	0	..	58	0	72	0	..	75	0
Arsenic, lump ,,	20	0	..	20	6	18	6	..	0	0
powder ,,	10	3	..	10	6	8	3	..	8	6
Brimstone, rough .. per ton	127	6	..	145	0	140	0	..	145	0
roll per cwt	10	0	..	0	0	10	0	..	10	3
flour ,,	11	6	..	12	6	12	3	..	13	0
Iodine, dry per oz.	1	3	..	0	0	1	8	..	1	10
Ivory Black, dry .. per cwt.	8	0	..	0	0	8	6	..	0	0
Magnesia, calcined .. per lb.	1	6	..	0	0	1	6	..	0	0
Mercury per bottle	320	0	..	0	0	260	0	..	0	0
Minium, red per cwt.	24	6	..	25	6	21	3	..	21	6
orange ,,	35	6	..	0	0	31	6	..	32	0
Precipitate, red per lb.	5	2	..	0	0	4	3	..	0	0
white .. ,,	5	0	..	0	0	4	2	..	0	0
Prussian Blue ,,	0	0	..	0	0	0	0	..	0	0
SALTS—										
Alum per ton	170	0	..	180	0	165	0	..	170	0
powder ,,	100	0	..	0	0	175	0	..	130	0
Ammonia:										
Carbonate per lb.	0	7½	..	0	7¾	0	7	..	0	7¼
Hydrochlorate, crude, white per ton	050	0	..	0	0	640	0	..	0	0
British (*see* Sal Ammoniac)										
Sulphate per ton	360	0	..	370	0	420	0	..	425	0
Argol, Cape per cwt	87	0	..	95	0	70	0	..	90	0
Red ,,	75	0	..	35	0	65	0	..	30	0
Oporto, red ,,	31	0	..	32	0	0	0	..	0	0
Sicily ,,	52	6	..	57	6	0	0	..	0	0
Ashes (*see* Potash and Soda)										
Bleaching powd .. per cwt.	11	0	..	0	0	13	6	..	13	9
Borax, crude ,,	40	0	..	85	0	40	0	..	75	0
British refnd. ,,	92	6	..	95	0	100	0	..	0	0
Calomel per lb.	4	9	..	0	0	3	10	..	0	0
Copper:										
Sulphate per cwt.	33	0	..	0	0	33	0	..	0	0
Copperas, green .. per ton	60	0	..	62	6	60	0	..	02	6
Corrosive Sublimate .. p. lb.	4	0	..	0	0	3	3	..	0	0
Cr. Tartar, French, p. cwt.	111	0	..	112	0	107	6	..	110	0
brown ,,	05	0	..	100	0	100	0	..	0	0
Epsom Salts per cwt.	5	9	..	6	3	5	9	..	6	3
Glauber Salts ,,	4	6	..	5	6	7	6	..	0	0
Lime:										
Acetate, white, per cwt.	14	0	..	21	0	14	0	..	22	6
Magnesia: Carbonate ,,	42	6	..	45	0	42	6	..	45	0
Potash:										
Bichromate per lb.	0	8½	..	0		0	8½	..	0	0
Carbonate:										
Potashes, Canada, 1st sort per cwt.	36	0	..	36	6	39	6	..	40	6
Pearlashes, Canada, 1st sort per cwt.	47	0	..	0	0	54	0	..	55	0
Chlorate per lb.	1	3	..	0	0	1	10	..	1	11
Prussiate ,,	1	3	..	0	0	1	5½	..	1	5¾
red ,,	2	10	..	2	11	3	1	..	0	0
Tartrate (*see* Argol and Cream of Tartar)										
Potassium:										
Chloride per cwt.	8	0	..	0	0	9	9	..	10	0
Iodide per lb.	19	0	..	20	0	82	0	..	0	0
Quinine:										
Sulphate, British, in bottles per oz.	3	9	..	9	0	8	0	..	0	0
Sulphate, French ,,	0	6	..	9	9	0	0	..	0	0
Sal Acetos per lb.	0	11	..	0	11½	1	3½	..	0	0
Sal Ammoniac, Brit. cwt.	44	0	..	45	0	43	0	..	49	0
Saltpetre:										
Bengal, 6 per cent or under per cwt.	25	6	..	26	0	28	0	..	29	0
Bengal, over 6 per cent. per cwt.	24	0	..	25	0	26	6	..	27	6
British, refined ,,	29	0	..	29	0	82	0	..	32	6
Soda: Bicarbonate, p. cwt.	17	9	..	18	0	18	0	..	0	0
Carbonate:										
Soda Ash per deg.	0	2½	..	0	0	0	3½	..	0	0
Soda Crystals per ton	115	0	..	0	0	150	0	..	152	6
Hyposulphite .. per cwt	15	0	..	16	0	15	6	..	16	0
Nitrate per cwt.	14	0	..	14	6	14	0	..	14	3
Sugar of Lead, White, cwt.	47	0	..	48	0	44	0	..	0	0
Sugar of Lead, Brown, cwt.	33	0	to	34	0	30	0	to	0	0
Sulphur (*see* Brimstone)										
Verdigris per lb.	1	1½	..	1	6	1	1	..	1	3
Vermilion, English .. ,,	4	0	..	4	8	3	8	..	3	10
China ,,	4	3	..	4	4	3	7	..	4	0

DRUGS.

	1873.					1872.				
	s.	d.		s.	d.	s.	d.		s.	d.
Aloes, Hepatic per cwt.	80	0	..	200	0	100	0	..	240	0
Socotrine .. ,,	110	0	..	320	0	160	0	..	420	0
Cape, good .. ,,	30	0	..	39	0	30	0	..	32	6
Inferior ,,	17	0	..	29	0	25	0	..	29	0
Barbadoes ,,	00	0	..	200	0	70	0	..	200	0
Ambergris, grey oz.	40	0	..	45	0	20	0	..	25	0
BALSAM —										
Canada per lb.	2	0	..	0	0	1	9	..	0	0
Capivi ,,	2	11	..	0	0	1	10	..	2	1
Peru ,,	3	6	..	0	0	9	6	..	0	0
Tolu ,,	1	9	..	1	11	1	9	..	1	11
BARKS—										
Canella alba per cwt.	15	0	..	23	0	15	0	..	25	0
Cascarilla ,,	25	0	..	30	0	26	0	..	37	0
Peru, crown & grey per lb.	0	11	..	2	8	1	4	..	2	8
Calisaya, flat ,,	3	0	..	3	6	3	4	..	4	0
quill	3	3	..	4	3	3	6	..	4	3
Carthagena ,,	0	9	..	2	0	0	10	..	2	0
Pitayo ,,	0	6	..	2	2	0	6	..	1	8
Red ,,	1	10	..	6	0	1	10	..	6	0
Buchu Leaves ,,	0	1	..	0	9	0	3½	..	1	0
Camphor, China .. per cwt.	75	0	..	0	0	75	0	..	77	6
Japan ,,	80	0	..	82	0	78	0	..	80	0
Refin Eng. per lb.	1	2	..	0	0	1	3½	..	1	4
Cantharides ,,	7	0	..	0	0	5	7	..	6	0
Chamomile Flowers p. cwt	45	0	..	75	0	45	0	..	80	0
Castoreum per lb.	7	0	..	20	0	3	0	..	30	0
Dragon's Blood, lp. p. cwt.	100	0	..	240	0	110	0	..	220	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices)										
Anise, China Star pr cwt.	140	0	..	150	0	107	6	..	15	0
Spanish, &c. ,,	38	0	..	42	0	20	0	..	36	0
Beans, Tonquin .. per lb.	1	9	..	2	6	1	4	..	1	8
Cardamoms, Malabar good ,,	4	6	..	6	3	6	6	..	7	10
inferior ,,	3	6	..	4	5	4	5	..	6	0
Madras ,,	3	0	..	4	6	2	6	..	6	0
Ceylon ,,	4	3	..	4	6	4	4	..	0	0
Cassia Fistula .. per cwt.	10	0	..	20	0	11	0	..	22	0
Castor Seeds .. ,,	5	0	..	10	0	5	0	..	10	0
Cocculus Indicus ,,	13	0	..	17	0	13	0	..	14	0
Colocynth, apple .. per lb.	0	4	..	0	9	0	3	..	0	6
Croton Seeds .. per cwt.	45	0	..	54	0	63	0	..	67	0
Cubebs ,,	22	0	..	26	0	20	0	..	30	0
Cummin ,,	18	0	..	26	0	25	0	..	30	0
Dividivi ,,	11	0	..	15	0	12	0	..	15	0
Fenugreek ,,	12	0	..	20	0	12	0	..	22	0
Guinea Grains .. ,,	25	0	..	23	0	25	0	..	30	0
Juniper Berries ,,	9	0	..	10	6	10	0	..	10	6
Nux Vomica ,,	3	3	..	12	0	9	0	..	13	0
Tamarinds, East India ,,	5	0	..	18	0	5	0	..	20	0
West India, new ,,	16	0	..	32	0	20	0	..	38	0
Vanilla, large per lb.	73	0	..	83	0	55	0	..	74	0
inferior ,,	23	0	..	70	0	20	0	..	54	0
Wormseed per cwt.	0	0	..	0	0	0	0	..	0	0
Ginger, Preserved, in bond (duty 1d. per lb.) per lb.	0	6	..	0	7	0	7	..	0	10
Gums (*see separate list*)										
Honey, Chili per cwt.	33	0	..	42	0	28	0	..	42	0
Cuba ,,	0	0	..	0	0	35	0	..	50	0
Jamaica .. ,,	26	0	..	44	0	30	0	..	50	0
Australian ,,	25	0	..	46	0	0	0	..	0	0
Ipecacuanha per lb.	3	0	..	3	6	4	6	..	4	8
Isinglass, Brazil .. ,,	3	0	..	5	4	2	6	..	4	7
Tongue sort ,,	3	9	..	5	6	3	4	..	5	1
East India ,,	2	0	..	4	6	1	0	..	4	6
West India ,,	4	9	..	5	4	4	0	..	4	5
Russ. long staple	8	0	..	12	0	8	0	..	12	0
,, inferior ,,	3	0	..	7	6	8		..		6
,, Simovia	2	6	..		6	2		..	4	6
Jalap, good ,,	1	4	..	1	5	1	3	..	2	6
infer. & stems ,,	0	10	..	1	2	0	6	..	1	8
Lemon Juice per degree	0	2¾	..	0	0	0	2¼	..	0	2½
Liquorice, Spanish per cwt.	35	0	..	70	0	35	0	..	0	0
Liquorice Root ,,	10	6	..	15	0	0	0	..	0	0
Manna, flaky per lb.	2	6	..	3	3	3	3	..		
small ,,	1	4	..	1	9	1	9	..	2	0
Musk, Pod per oz.	20	0	..	38	0	19	0	..	45	0
Grain ,,	50	0	..	57	0	0	0	..	0	0
OILS (*see also separate List*)										
Almond, expressed per lb.	1	2	..	0	0	1	1	..	0	0
Castor, 1st pale ,,	0	5½	..	0	5¾	0	5¼	..	0	0
second ,,	0	5¼	..	0	5½	0	4¾	..	0	5
infer. & dark ,,	0	4½	..	0	5	0	4¼	..	0	4¾
Bombay (in casks)	0	4¾	..	0	0	0	4½	..	0	4½
Cod Liver per gall.	3	0	..	6	0	4	6	..	6	3
Croton per oz.	0	3	..	0	4	0	3	..	0	4
Essential Oils:										
Almond per lb.	30	0	..	0	0	35	0	..	0	0
Anise-seed ,,	10	9	..	0	0	12	9	..	13	0
Bay per cwt.	0	0	..	0	0	65	0	..	70	0
Bergamot per lb.	15	0	..	18	0	8	0	..	15	0
Cajoput, (in bond) per oz.	2	4	..	2	5	0	0	..	0	0
Caraway per lb.	5	6	..	6	3	5	6	..	6	3
Cassia ,,	5	9	..	6	0	6	10	..	0	0
Cinnamon per oz.	1	0	..	5	0	1	0	..	7	0
Cinnamon-leaf .. ,,	0	2⅞	..	0	3	0	2	..	0	5
Citronelle ,,	0	1⅞	..	0	2	0	2⅜	..	0	2⅞

	1873.					1872.				
Essential Oils, *continued*:—	s.	d.		s.	d.	s.	d.		s.	d.
Clove............per lb.	6	3	to	0	0	4	6	to	0	0
Juniper .... ,,	1	9	..	2	0	1	3	..	2	4
Lavender........ ,,	1	10	..	5	6	3	6	..	6	0
Lemon........... ,,	14	0	..	15	0	5	0	..	15	0
Lemongrass ....per oz.	0	8¼	..	0	3½	0	5	..	0	5⅛
Neroli .... ,,	0	4	..	0	6	0	5	..	0	6
Nutmeg .... ,,	0	8½	..	0	8⅝	0	7	..	0	9
Orange..........per lb.	8	0	..	11	0	7	0	..	8	0
Otto of Roses....per oz.	13	0	..	23	0	12	0	..	21	0
Patchouli ...... ,,	3	9	..	4	0	4	0	..	0	0
Peppermint:										
American ....per lb.	17	0	..	18	0	13	0	..	14	0
English ...... ,,	27	0	..	34	0	30	0	..	33	0
Rosemary ...... ,,	1	4	..	1	10	1	9	..	2	0
Sassafras........ ,,	2	3	..	3	8	3	0	..	3	6
Spearmint ...... ,,	6	0	..	19	0	4	0	..	16	0
Thyme.......... ,,	1	10	..	0	0	1	10	..	2	0
Mace, expressed .. per oz.	0	2	..	0	3	0	1½	..	0	3
Opium, Turkey ...... per lb.	24	0	..	27	0	21	0	..	24	0
inferior ...... ,,	12	0	..	20	0	12	0	..	20	0
Quassia (bitter wood) per ton	70	0	..	90	0	70	0	..	100	0
Rhubarb, China, good and fine ....per lb.	2	7	..	5	3	2	3	..	6	0
Good, mid. to ord. ,,	0	7	..	2	5	0	3	..	2	0
Dutch trimmed ,,	0	0	..	0	0	9	0	..	9	6
Russian .... ,,	0	0	..	0	0	0	0	..	0	0
ROOTS—Calumba..per cwt.	10	0	..	25	6	23	0	..	40	0
China .... ,,	22	0	..	23	0	23	0	..	27	0
Galangal .... ,,	18	0	..	26	0	16	0	..	10	0
Gentian .... ,,	13	0	..	19	0	20	0	..	22	0
Hellebore ...... ,,	30	0	..	33	0	30	0	..	32	0
Orris............ ,,	36	0	..	80	0	40	0	..	70	0
Pellitory .... ,,	38	0	..	39	0	30	0	..	38	0
Pink..............per lb.	1	0	..	1	3	0	9	..	1	3
Rhatany.......... ,,	0	6	..	1	6	0	4	..	0	11
Senoka........... ,,	4	6	..	5	0	4	6	..	0	0
Snake .... ,,	1	8	..	1	0	1	1	..	1	2
Saffron, Spanish .. ,,	24	0	..	25	0	27	0	..	0	0
Salep ....per cwt.	170	0	..	180	0	170	0	..	200	0
Sarsaparilla, Lima per lb.	0	5½	..	0	7	0	7½	..	0	9
Para.............. ,,	1	0	..	1	3	1	2	..	1	3
Honduras .... ,,	1	1	..	1	7	1	2	..	1	8
Jamaica .... ,,	1	6	..	2	0	1	6	..	2	6
Sassafras ....per cwt.	16	0	..	17	0	0	0	..	0	0
Scammony, Virgin ..per lb.	26	0	..	31	0	26	0	..	32	0
second & ordinary ,,	11	0	..	25	0	10	0	..	25	0
Senna, Bombay .... ,,	0	1	..	0	5	0	1½	..	0	4
Tinnivelly .... ,,	0	0¾	..	1	2	0	1½	..	1	2
Alexandria........ ,,	0	4	..	1	10	0	2½	..	2	1
Spermaceti, refined.. ,,	1	6	..	0	0	1	6	..	0	0
American .... ,,	1	2	..	1	3	1	2	..	1	3
Squills .... ,,	0	1	..	0	3	0	1	..	0	2

GUMS.

Ammoniaci drop ..per cwt.	30	0	..	130	0	140	0	..	200	0
lump .. ,,	50	0	..	80	0	80	0	..	130	0
Animi, fine washed ,,	220	0	..	270	0	280	0	..	830	0
bold scraped ,,	180	0	..	220	0	220	0	..	280	0
sorts ...... ,,	100	0	..	200	0	140	0	..	230	0
dark ...... ,,	80	0	..	95	0	90	0	..	130	0
Arabic, E. I., fine	65	0	..	75	0	70	0	..	84	0
pale picked .. ,,	75	0	..	73	0	75	0	..	84	0
srts, gd. to fin ,,	50	0	..	60	0	60	0	..	69	0
garblings.. ,,	20	0	..	45	0	23	0	..	50	0
Turkey, pick. gd to fin. ,,	150	0	..	230	0	160	0	..	230	0
second & inf. ,	80	0	..	140	0	85	0	..	150	0
in sorts .. ,,	50	0	..	70	0	65	0	..	80	0
Gedda.... ,,	21	0	..	35	0	30	0	..	42	0
Barbary, white .. ,,	50	0	..	57	0	50	0	..	55	0
brown .. ,,	26	0	..	33	0	36	0	..	44	0
Australian ...... ,,	27	0	..	45	0	22	0	..	45	0
Assafœtida, com. to gd ,,	23	0	..	70	0	67	6	..	106	0
Benjamin, 1st qual. ,,	170	0	..	430	0	200	0	..	520	0
2nd ,, ,,	160	0	..	210	0	150	0	..	210	0
3rd ,, ,,	70	0	..	85	0	67	6	..	90	0
Copal, Angola red ,,	120	0	..	135	0	140	0	..	147	6
Benguela .. ,,	110	0	..	115	0	110	0	..	115	0
Sierra Leone..per lb.	0	3	..	0	9	0	3½	..	0	11
Manilla ....per cwt.	13	0	..	26	0	17	0	..	39	0
Dammar, pale .... ,,	47	0	..	50	0	55	0	..	60	0
Euphorbium ...... ,,	11	0	..	15	0	15	0	..	17	0
Galbanum .... per lb.	1	6	..	2	0	0	0	..	0	0
Gamboge, pckd. pipe per cwt.	220	0	..	300	0	270	0	..	310	0
Guaiacum ....per lb.	0	8	..	2	6	0	8	..	2	8
Kino..............per cwt.	50	0	..	85	0	50	0	..	35	0
Kowrie, rough.... ,,	18	6	..	50	0	0	0	..	0	0
scraped .. ,,	32	0	..	45	0	0	0	..	0	0
Mastic, picked......per lb.	5	0	..	6	6	6	0	..	7	0
Myrrh, gd. & fine per cwt.	120	0	..	240	0	120	0	..	200	0
sorts......	40	0	..	110	0	78	0	..	115	0
Olibanum, p. sorts	71	0	..	77	0	73	0	..	77	0
amber & ylw.	60	0	..	70	0	64	0	..	72	0
garblings .... ,,	23	0	..	33	0	20	0	..	33	0
Senegal ....per cwt.	60	0	..	80	0	70	0	..	30	0
Sandarac .... ,,	55	0	..	94	0	55	0	..	100	0
Shellac, Orange.... ,,	200	0	..	217	6	160	6	..	170	0
Liver...... ,,	190	0	..	197	6	150	0	..	160	0
Thus.............. ,,	18	0	..	30	0	21	0	..	22	0
Tragacanth, leaf.. ,,	270	0	..	410	0	200	0	..	450	0
in sorts ,,	60	0	..	160	0	110	0	..	180	0

OIL.

	£	s.		£	s.	£	s.		£	s.
Seal pale..........per tun	35	0	..	36	0	30	0	..	40	0
yellow to tinged ,,	32	0	..	34	10	33	0	..	38	0
brown........ ,,	30	0	..	31	0	30	0	..	32	10
Sperm .... ,,	94	0	..	95	0	85	0	..	86	0
Cod .... ,,	35	10	..	36	0	39	10	..	40	0

	1873.					1872.				
Oils, *continued*:—	£	s.		£	s.	£	s.		£	s.
Whale, South Sea, pale, per tun	34	0	to	0	0	38	0	to	0	0
yellow ,,	33	0	..	33	10	37	0	..	0	0
brown ,,	30	0	..	31	0	32	0	..	0	0
East India, Fish ,,	28	0	..	0	0	28	0	..	0	0
Olive, Galipoli ....per ton	45	0	..	0	0	46	10	..	0	0
Trieste ...... ,,	44	10	..	46	0	45	10	..	46	0
Levant ...... ,,	42	10	..	43	0	43	10	..	0	0
Mogador...... ,,	41	0	..	41	10	42	0	..	0	0
Spanish ...... ,,	43	0	..	44	0	45	0	..	0	0
Sicily .... ,,	43	0	..	43	10	45	0	..	0	0
Cocoanut, Cochin .... ,,	38	10	..	39	0	36	0	..	39	0
Ceylon .. ,,	32	10	..	33	0	35	10	..	0	0
Sydney ,,	29	0	..	33	10	31	0	..	35	10
Ground Nut and Ginoelly:										
Bombay	0	0	..	0	0	0	0	..	0	0
Madras.................	35	10	..	36	0	35	10	..	36	0
Palm, fine	37	10	..	38	0	30	10	..	40	0
Linseed	31	15	..	32	0	35	10	..	35	15
Rapeseed, English, pale ..	35	10	..	0	0	41	0	..	40	5
brown........	33	10	..	0	0	39	0	..	39	5
Foreign pale....	36	10	..	37	0	42	0	..	42	10
brown........	0	0	..	0	0	30	15	..	40	0
Cottonseed	29	10	..	30	10	32	10	..	0	0
Lard....................	45	0	..	46	0	44	0	..	46	0
Tallow	29	0	..	0	0	36	0	..	0	0
Turpentine, American, cks.	32	6	..	0	0	42	0	..	0	0
French, ,,	0	0	..	0	0	0	0	..	0	0
Petroleum, Crude	0	0	..	0	0	0	0	..	0	0
	s.	d.		s.	d.	s.	d.		s.	d.
refined, per gall.	1	2	..	0	0	1	6	..	1	6¼
Spirit ,,	1	0	..	1	1	1	2½	..	1	3

SEEDS.

Canary ....per qr.	48	0	..	60	0	48	0	..	52	0
Caraway, English per cwt.	30	0	..	49	0	40	0	..	44	0
German, &c.....	26	0	..	36	0	29	0	..	36	0
Coriander	10	0	..	20	0	20	0	..	25	0
Hemp..............per qr.	40	0	..	41	0	40	0	..	46	0
Linseed, English per qr...	58	0	..	61	0	60	0	..	67	0
Black Sea & Azof	60	0	..	60	9	61	6	..	0	0
Calcutta ,,	63	0	..	0	0	66	0	..	0	0
Bombay ,,	64	0	..	0	0	64	6	..	0	0
St. Petrsbrg. ,,	56	0	..	58	0	59	0	..	59	6
Mustard, brown..per bshl.	10	6	..	15	6	13	0	..	16	0
white.. ,,	8	6	..	12	6	8	0	..	9	6
Poppy, East India per qr.	65	6	..	66	9	61	0	..	62	0

SPICES.

Cassia Lignea ....per cwt.	77	0	..	81	0	85	0	..	100	0
Vera .... ,,	27	6	..	55	0	33	0	..	70	0
Buds .... ,,	117	6	..	120	0	125	0	..	130	0
Cinnamon, Ceylon,										
1st quality ....per lb.	1	7	..	3	6	2	8	..	3	9
2nd do. ...... ,,	1	4	..	8	1	2	1	..	3	4
3rd do. ...... ,,	1	0	..	2	10	1	8	..	2	11
Tellicherry ...... ,,	2	7	..	3	0	2	9	..	3	2
Cloves, Penang.... ,,	1	2	..	1	3	1	4	..	1	6
Amboyna........ ,,	0	0	..	0	11	0	6½	..	0	11
Zanzibar .... ,,	0	10	..	0	0	0	7	..	0	0
Ginger, Jam., fine per cwt.	110	0	..	252	0	100	0	..	200	0
Ord. to good .. ,,	66	0	..	100	0	50	0	..	90	0
African.......... ,,	54	0	..	54	6	44	0	..	45	0
Bengal .... ,,	53	0	..	54	0	39	0	..	0	0
Malabar .... ,,	53	0	..	54	0	0	0	..	0	0
Cochin .... ,,	68	0	..	120	0	45	0	..	125	0
Pepper, Blk, Malabar, per lb.	0	7½	..	0	8	0	7	..	0	7½
Singapore........ ,,	0	7	..	0	0	0	6¾	..	0	0
White, Tellicherry ,,	2	0	..	0	0	0	0	..	0	0
Cayenne .... ,,	1	0	..	2	0	1	6	..	1	11
Mace, 1st quality ..per lb.	3	7	..	4	2	4	2	..	4	8
2nd and inferior.. ,,	2	11	..	3	6	3	8	..	4	1
Nutmegs, 78 to 60 to lb.	8	4	..	4	5	8	6	..	4	2
00 to 30 ,,	3	1	..	3	3	3	3	..	3	5
132 to 95 ,,	2	7	..	3	0	2	9	..	3	2
Pimenta	0	2½	..	0	3	0	8	..	0	0

VARIOUS PRODUCTS.

COCHINEAL—										
Honduras, black ..per lb.	2	3	..	3	1	2	5	..	3	3
,, silver .. ,,	2	1	..	2	7	2	4	..	2	9
,, pasty .. ,,	1	8	..	2	0	2	0	..	2	2
Mexican, black .... ,,	2	8	..	2	5	2	5	..	2	8
,, silver .... ,,	2	0	..	0	0	2	2	..	2	3
Teneriffe, black....	2	3	..	3	9	2	4	..	3	9
,, silver.... ,,	2	1	..	2	4	2	3	..	2	6
PUMICE STONE ..per ton	120	0	..	150	0	120	0	..	200	0
SOAP, Castile ....per cwt.	20	0	..	33	0	20	0	..	33	0
SPONGE, Turk. fin pkd pr lb.	12	0	..	16	0	12	0	..	16	0
Fair to good .. ,,	4	0	..	11	0	4	0	..	11	0
Ordinary...... ,,	1	0	..	3	6	1	0	..	3	6
Bahama............ ..	0	6	..	3	6	0	6	..	2	6
TERRA JAPONICA—										
Gambier .. per cwt.	24	6	..	24	9	24	9	..	25	0
Free cubes ,,	34	0	..	38	0	27	6	..	23	6
Cutch .... ,,	20	6	..	21	6	20	0	..	23	6
WOOD, Dye, Bar ..per ton	£3	7/6	..	£3	10	£4	0	..	£4	5/
Brazil, Branch].... ,,	27	0	..	30	0	25	0	..	48	0
,, Legs ...... ,,	9	0	..	16	0	9	0	..	15	0
Cam .... ,,	15	0	..	30	0	15	0	..	18	0
Fustic, Cuba...... ,,	9	0	..	9	10	3	10	..	0	0
Jamaica .... ,,	6	10	..	7	5	5	10	..	7	0
Logwood, Campeachy ,,	8	10	..	9	0	9	0	..	10	0
Honduras ...... ,,	6	5	..	6	10	5	10	..	5	15
St. Domingo .... ,,	5	10	..	£5	12/6	4	5	..	4	15
Jamaica .... ,,	5	0	..	5	15	4	0	..	4	5
Lima, first pile.... ,,	10	0	..	11	10	9	0	..	10	0
Red Sanders .... ,,	6	5	..	0	0	5	5	..	0	0

NOTES & QUERIES

R.—A contemporary gives the following as the best cement for meerschaum :—Make fine freshly calcined plaster of Paris into a cream with water, by sifting or dusting the plaster into the water, and apply as a cement to the broken parts. It sets in a few minutes, but takes a few days to become dry. It is fireproof.

The *Scientific American* gives the following as the best and cheapest process of bronzing some small articles made of iron wire: Clean the wire perfectly, and then immerse it in a solution of sulphate of copper (blue vitriol) until covered with a coating of metallic copper. Then wash and immerse the articles in the following solution : Verdigris, 2 ounces; sal ammoniac, 1 ounce; vinegar, 1 pint, diluted with water until it tastes only slightly metallic; then boiled for a few minutes and filtered. The articles of wire are steeped in this liquor at the boiling point, until the desired effect is produced; but do not keep them in too long. When taken out, wash carefully in hot water and dry.

S. S.—Powdered hellebore root is not a poison at all within the meaning of the Pharmacy Act. The first part of the schedule includes "all poisonous vegetable *alkaloids;*" but hellebore is not an alkaloid. Veratrin is included in that description.

L. W.—One month's notice is the custom of the trade. This would doubtless be regarded as legally sufficient.

We wish to ascertain for an American correspondent whether carbolic soap, or coal-tar soap, or any similar article was made in England previous to 1858. Perhaps some reader will kindly inform us on this matter.

W. B. D.—A student not extravagantly inclined could spend a year in Berlin, Bonn, or any German town, and attend the chemical course and lectures for say £100. If he did it for less he would need to be economical. Of course the lectures would not be of much use to him until he had mastered the language. A year's study in that direction *before* going to Germany is most desirable.

Rustic asked for the recipe for "composition powder" a few months ago. We suggested Pulv. cretæ arom.; but Mr. Barrow, Southport, says we are totally in error. If *Rustic* will communicate with Mr. Barrow, he will probably get some useful information.

Aconitum Napellus.—Unfortunately, commercial "carbonate of lead" is a substance of so uncertain composition, that it would be impossible to calculate theoretically its equivalent in "red lead." It is prepared, as you may know, by decomposing a solution of acetate or nitrate of lead with an alkaline carbonate, and collecting the precipitate. If the solutions are *cold, true* carbonate of lead is obtained, which has the constant composition $PbCO_3$. But if, as would generally be the case in making large quantities, the solutions are used *hot*, a basic salt is formed, containing a variable amount of $(PbCO_3,Pb2HO)$, and thus the amount of metal in an ordinary trade sample could only be ascertained by analysis. If, however, you have been accustomed to prepare it yourself, or have reason to know that it is a true carbonate made from cold solutions, you will find the amount of red lead (Pb_3O_4) corresponding to five ounces of it, to be exactly 4·275, or about 4¼ ounces.

T. McG.—You should collect the poppy capsules before they are quite ripe, and dry them thoroughly previous to packing. You could readily dispose of them to any wholesale druggist.

Enquirer.—We sympathise with you in your disappointment, and at the same time much admire the *naïveté* of your proposal. Acting upon the suggestion you have given us, we conclude that if a customer purchased two boxes of pills at your establishment, you would present him with a third gratis, in order to balance any profit you obtained from the previous sale. We are afraid, however, that method of doing business is limited to Somersetshire. You will find numerous recipes for hair dyes and marking ink in recent issues of the CHEMIST AND DRUGGIST. We will try to get you the formula for the Cattle Oils.

Dispenser.—We think it is by no means unusual to prescribe chloral hydrate in pills. We are not surprised at the difficulty you experienced in finding a good excipient, as it is an awkward substance to manipulate. You will, however, find the following formula produce an elegant pill:—

℞ Chloral hydrat., gr. lx.
Pulv. tragacanth, gr. iij.
Soluble cream of tartar, gr. xij.

M., and divide into twenty pills.

Pharmaeien.—(1.) Jalapine is simply the resina jalapæ of the Pharmacopœia deprived of its colour by animal charcoal. (2.) Of course there is no objection to rolling blue pills in magnesia, the mercury being in the metallic state. With calomel the conditions are altered. A salt of mercury, the chloride being present, double decomposition ensues between it and the magnesia, forming magnesium chloride and mercurous oxide.

Quercus.—Tannin, prepared according to the directions of the Pharmacopœia, is by no means pure, since the entire solution being evaporated, the residue must necessarily contain whatever gallic acid and colouring matter has been dissolved out of the galls. The best method of preparation is to powder the galls finely, and to percolate with hydrated ether. The liquid which passes through the percolator will then separate into two portions, the lower stratum being a strong solution of tannin in water, and the upper one ether, containing gallic acid, colouring matter, and other impurities. The lower syrupy liquid should then be carefully removed, and placed near a vessel of strong sulphuric acid, under the receiver of an air pump.

A Subscriber.—Dextrine, or "British Gum," is produced by the action of acids on woody fibre and starch. Starch also in the dry state is converted at a temperature of 400° F. into dextrine. Potato and other starches, which have large, soft granules, are most easy to convert. Formerly dextrine was principally manufactured from solution of starch, by the addition of sulphuric acid with heat; the process, however, was imperfect, as it was found impossible to remove the whole of the sulphuric acid from the product, even with barium, the dextrine appearing by some means or other to hold the sulphate in solution. Now, however, it is prepared by moistening the starch with very dilute nitric acid, then applying a gentle heat to drive off the water, and heating the residue to 250° or 260° F.

A Student.—Cantharidine is now believed to be a solid volatile oil. The flies yield on an average about 0·4 per cent., and it is said to be most abundant in the female. When pure, it is insoluble in water, and in cold spirit, and, which is rather remarkable, completely so in bisulphide of carbon. It dissolves readily in glacial acetic acid, chloroform, and ether, also in the fixed alkalies, but not in ammonia. It is best obtained by exhausting the flies with chloroform, recovering most of the latter by distillation, evaporating the residue, and treating with carbon bisulphide. The cantharidine remains, and is purified by recrystallization from chloroform.

F. J. L.—According to the latest definition, given by Dr. Tyndall, in his "Lectures on Light," fluorescence is the power which certain bodies possess of diminishing the refrangibility of the rays of light, or of changing the rapid vibrations of the rays outside the violet into slower vibrations, thus making them visible.

H. J. B.—The crystals which you have observed in the Syr. ferri iodidi are those of grape sugar. By keeping, the iodide of iron becomes decomposed, and hydriodic acid is produced; and this, acting like other acids, converts the cane sugar into grape, which, being far less soluble, crystallizes out from the solution. On this account, all syrups which contain a vegetable acid—syrup of lemons, for instance—should be prepared without the aid of heat, which would accelerate the action of the acid, and so form glucose.

S. V. R.—The terms "over proof" and "under proof" are used by the Excise to express the strength of a spirit as compared with what is known as "proof spirit," which has the sp. gr. ·920. Thus "60 per cent over proof" means that in 100 volumes of that spirit there is contained as much alcohol as would be present in 160 volumes of the standard "proof."

Cortex is good enough to send us an answer to a correspondent cu from the *Birmingham Post.* According to the editor of that journal, "pharmaceutical is pronounced as if spelt farmakutical." It is so pronounced occasionally, but not usually, and such pronunciation we venture to think both pedantic and erroneous. The Greek word from which it is derived undoubtedly authorizes the k sound, but when the word is anglicized it seems to us it should follow the spirit of the English language. If it is correct to give the k sound in "pharmaceutical," it is undoubtedly equally correct to pronounce pharmacy, pharmaky, which nobody ever does.

J. M. J.—The best work in our estimation is—"A Manual of Electro-metallurgy," &c., by James Napier, F.C.S. (Griffin and Co.), price 3s. 6d. There is another cheaper work—"Electro-metallurgy Practically Treated," by Alex. Watt (Virtue and Co.), price 1s. 6d.

Enamel.—We must ask you to let your query stand over till next month, when we will get you good formulæ.

We wish to acknowledge the kind suggestions respecting our forthcoming Diary which we have received from Messrs. Anderson, of Musselburgh, Grey, of Crewe, and Phillips, of Church Stretton. We recognise the value of each, and promise our best and immediate attention.

Answers cannot be promised to correspondents' queries received after the 10th of the month. Correspondents will please give their correct names, as well as any *nom de plume* they may choose to adopt.